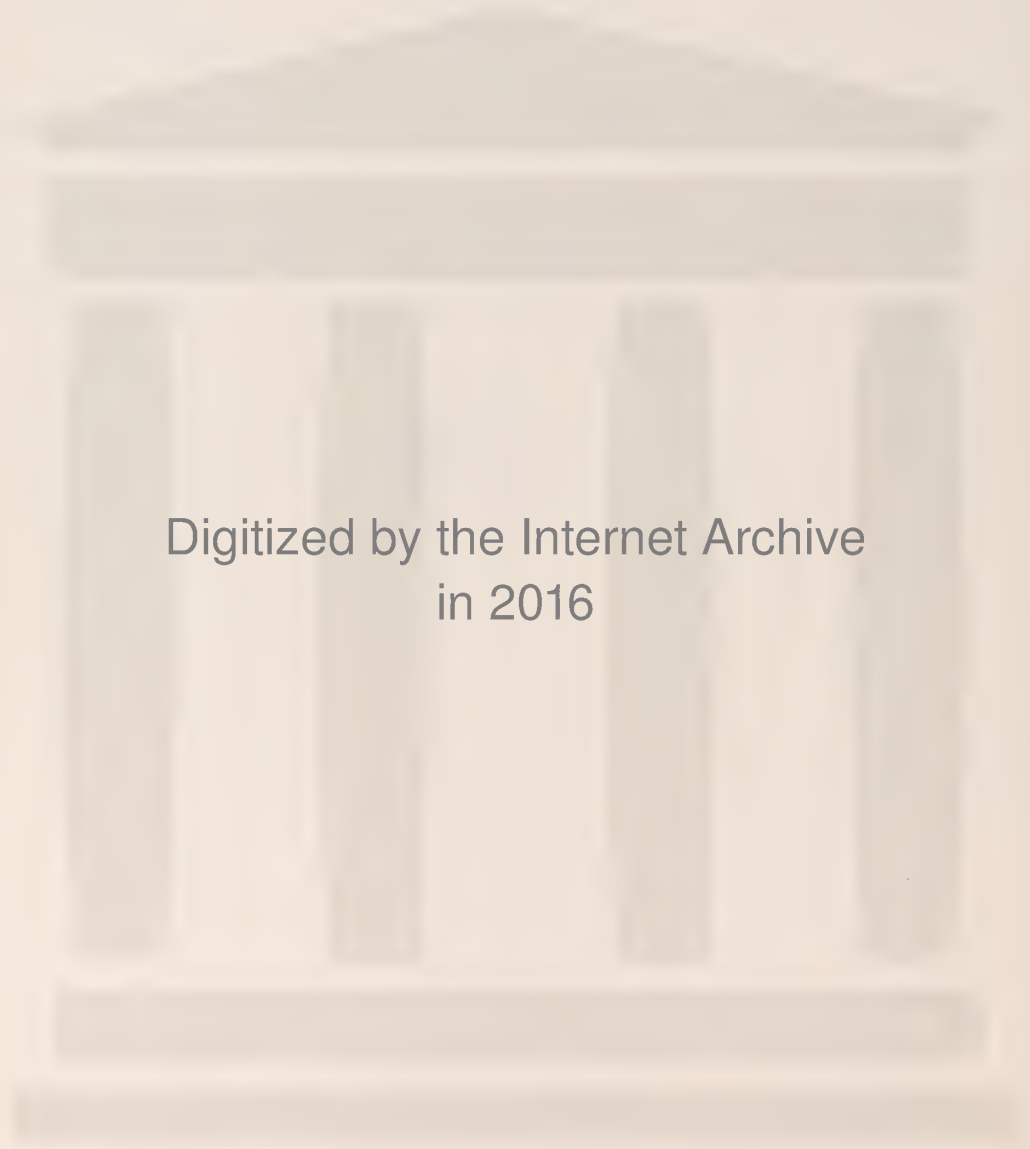
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JANUARY, 1960

LOUISIANA STATE MEDICAL SOCIETY

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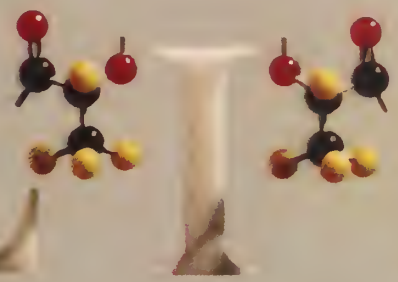
BLOOD LEVELS TWICE AS HIGH AS WITH POTASSIUM PENICILLIN V

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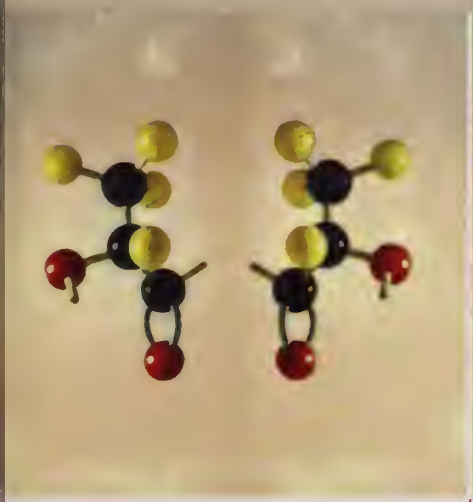
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ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSE

REDUCED HAZARD OF SERIOUS ALLERGENICITY BY SAFER ORAL ROUTE

MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN

BRISTOL

ORIGIN OF A NEW SYNTHETIC PENICILLIN

In March, 1957, Dr. John C. Sheehan of the Massachusetts Institute of Technology announced the total synthesis of penicillin from common raw materials, thus solving a problem which had baffled research workers for more than 15 years. Although total synthesis was not commercially practicable, this work, sponsored by Bristol Laboratories, made possible the subsequent synthesis of new penicillins not occurring in nature. Later scientists at Beecham Laboratories in England discovered that a key intermediate (6-aminopenicillanic acid) could be produced by a fermentation process. With these achievements, large scale production of synthetic penicillins became feasible.

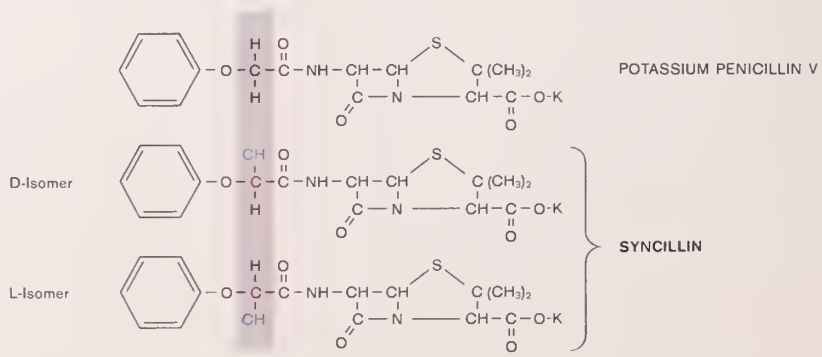
Organic chemists at Bristol then embarked upon an intensive program to develop better penicillins. Over five hundred were synthesized and underwent preliminary screening. Forty-six showed sufficient promise to warrant further investigation. Extensive microbiological, pharmacological, and clinical screening indicated that one compound, SYNCILLIN, had advantages of major importance over other penicillins.

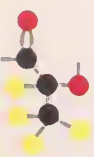
SYNCILLIN is the N-acylation product of 6-aminopenicillanic acid and α-phenoxypropionic acid (the phenylether of lactic acid). It is freely soluble in water and remarkably resistant to decomposition by acid. The acid stability of SYNCILLIN is equivalent to that of penicillin V at pH 2 and pH 3 at 37° C.[1]

SIGNIFICANCE OF MOLECULAR ASYMMETRY AND ISOMERIC COMPLEMENTARITY

SYNCILLIN has a molecular configuration similar to penicillin V, but contains an additional CH_3 group so positioned as to render the adjacent carbon atom asymmetric. (In the formulae below, the added CH_3 group is shown in blue and the asymmetric carbon atom in red.) As a result, SYNCILLIN occurs as a mixture of two isomers.

Each isomer has been synthesized in essentially pure form and found to possess distinctive chemical and biological properties. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. As produced, SYNCILLIN is a mixture of the L-isomer and the D-isomer. As will be shown later, the antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than either isomer alone against many organisms. This phenomenon is referred to here as *isomeric complementarity*.





SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY DEMONSTRATED IN VITRO

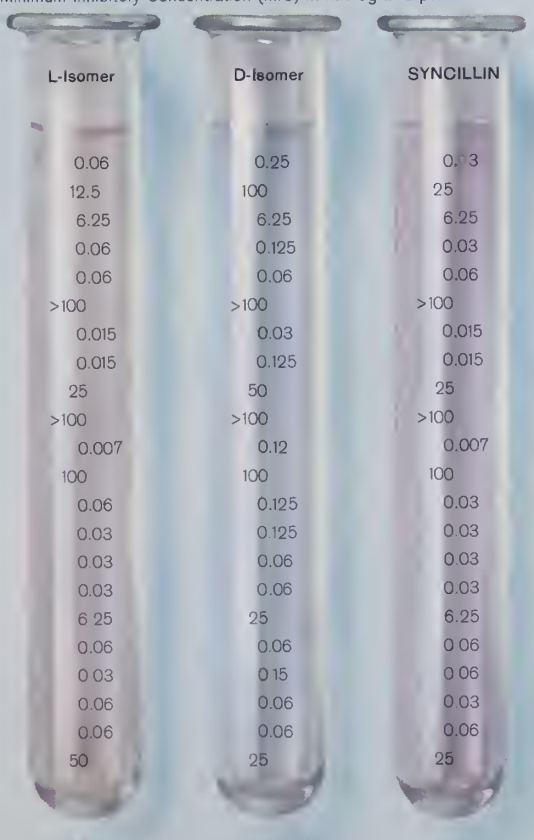
The *in vitro* minimum inhibitory concentration (MIC) of SYNCILLIN and of each of its two component isomers was determined for a variety of common pathogens and laboratory test organisms. As may be seen from Table 1, all three are highly effective against penicillin-susceptible staphylococci and against pneumococci, streptococci, gonococci, and corynebacteria; all are ineffective against Salmonella, *E. coli,* and other gram-negative coliform bacilli.

SYNCILLIN was more active against many of the test strains including some streptococci and staphylococci than either of its components. This demonstrates *in vitro* the phenomenon of isomeric complementarity.

TABLE 1

Minimum Concentrations of SYNCILLIN and Components Required to Inhibit a Wide Range of Bacteria

	Minimum Inhibitory Concentration (MIC) in Micrograms per Milliliter		
	L-Isomer	D-Isomer	SYNCILLIN
Bacillus anthracis	0.06	0.25	0.03
Bacillus cereus	12.5	100	25
Bacillus circulans ATCC 9961	6.25	6.25	6.25
Corynebacterium xerosis	0.06	0.125	0.03
*Diplococcus pneumoniae	0.06	0.06	0.06
Escherichia coli ATCC 8739	>100	>100	>100
Gaffkya tetragena	0.015	0.03	0.015
Micrococcus flavus	0.015	0.125	0.015
Salmonella paratyphi A	25	50	25
Salmonella typhosa	>100	>100	>100
Sarcina lutea ATCC 10054	0.007	0.12	0.007
Shigella sonnei	100	100	100
Staphylococcus aureus 209P	0.06	0.125	0.03
Staphylococcus aureus var. Smith	0.03	0.125	0.03
Streptococcus agalactiae ATCC 1077	0.03	0.06	0.03
Streptococcus dysgalactiae ATCC 9926	0.03	0.06	0.03
Streptococcus faecalis PCI 1305	6.25	25	6.25
*Streptococcus pyogenes 203	0.06	0.06	0.06
*Streptococcus pyogenes Digonnet	0.03	0.15	0.06
Streptococcus pyogenes 2320	0.06	0.06	0.03
Streptococcus pyogenes 23586	0.06	0.06	0.06
Vibrio comma	50	25	25

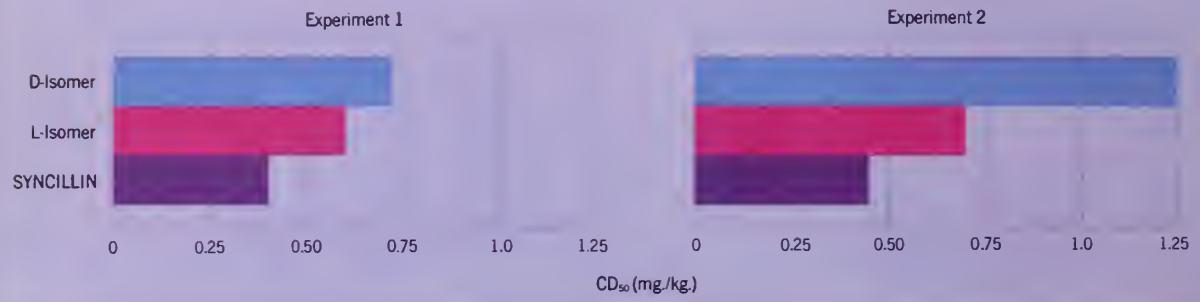


Serial dilution technique in heart infusion broth *10% serum added

ISOMERIC COMPLEMENTARITY CONFIRMED IN VIVO

To determine the median curative dose (CD_{50}) mice were infected with 100 times the lethal dose of *Staphylococcus aureus*. Each penicillin being tested was administered intramuscularly at the same time, and the dose required to cure half the animals determined. The greater effect of the mixture of the two isomers (SYNCILLIN) is shown in two independent experiments. (See Figure 1.) Note that isomeric complementarity is thus confirmed *in vivo*.

FIGURE 1 — Median Curative Dose (CD_{50}) for *Staphylococcus aureus* (var. Smith) Infections

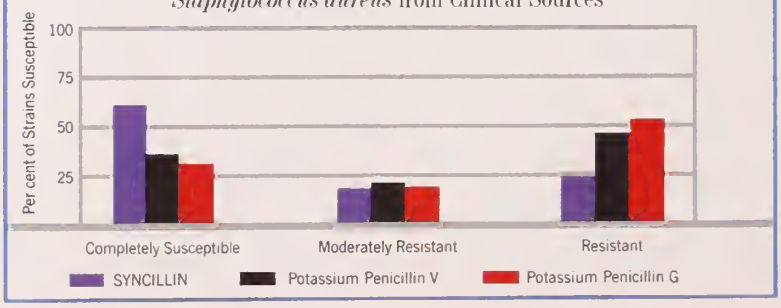


MANY STRAINS OF STAPHYLOCOCCI MORE SENSITIVE TO SYNCILLIN

SYNCILLIN has been tested against a large number of strains of *Staphylococcus aureus* isolated from clinical sources. Many organisms resistant to potassium penicillin G and potassium penicillin V proved sensitive to SYNCILLIN.

Wright[2] performed sensitivity studies on 54 strains, the majority of which were resistant or moderately resistant to penicillin V and penicillin G. Thirty-two (60%) of the strains were sensitive to SYNCILLIN, approximately twice as many as with the other penicillins. (See Figure 2.) In two-thirds of the isolates, SYNCILLIN produced inhibition at concentrations lower than those required for either of the other antibiotics. One strain was more sensitive to penicillin G.

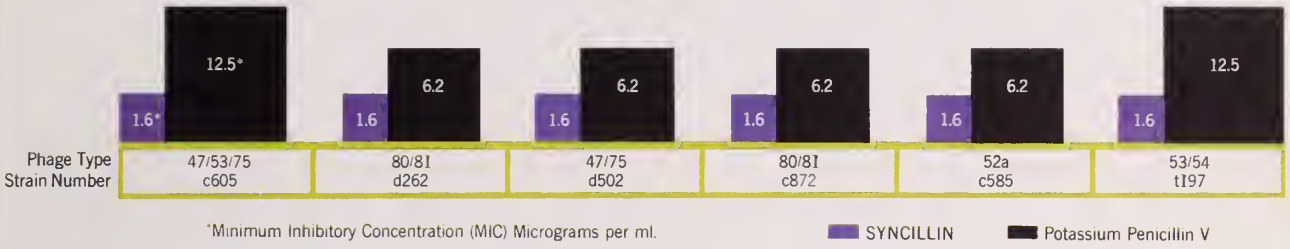
FIGURE 2 – *In Vitro* Sensitivity of 54 Strains of Coagulase-Positive *Staphylococcus aureus* from Clinical Sources



Of equal interest are the findings of White.[3] Six penicillin-resistant strains of staphylococci were isolated from hospital infections. None was sensitive to potassium penicillin V. All were sensitive to SYNCILLIN. (See Figure 3.)

FIGURE 3

Minimum Concentrations of SYNCILLIN Required to Inhibit
Hospital Strains of *Staphylococcus aureus* Resistant to Potassium Penicillin V

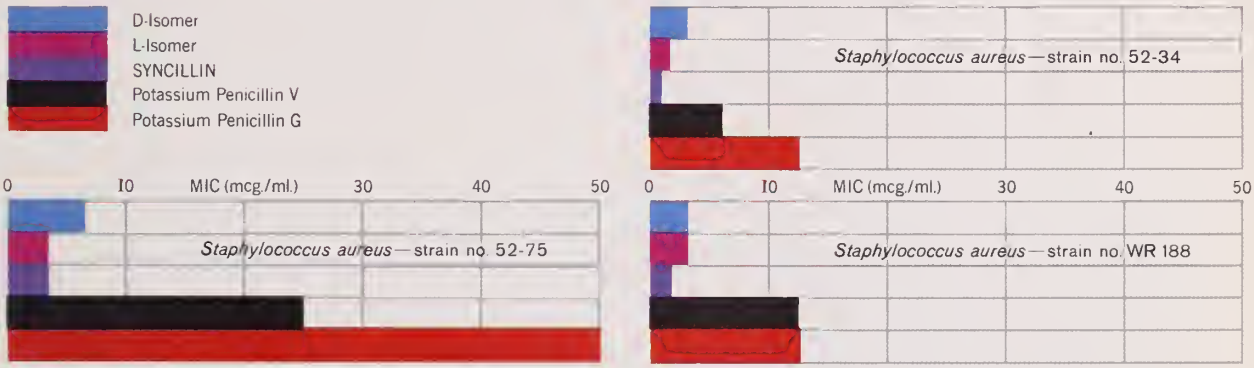


The efficacy of SYNCILLIN against the type 80/81 Staphylococcus (dangerous and widespread in hospitals) is worthy of special attention.

The complementary action of the component isomers is also seen with strains of staphylococci resistant to penicillins. Note that SYNCILLIN is more effective than either isomer against strains 52-34 and WR 188. (See Figure 4.) Against all three strains, SYNCILLIN is effective at concentrations below serum levels, while penicillins V and G are ineffective.

FIGURE 4

Minimum Inhibitory Concentrations (MIC) for Coagulase-Positive
Penicillin-Resistant Strains of *Staphylococcus aureus*



Isomeric complementarity has thus been demonstrated for:

—— *certain penicillin-susceptible streptococci, staphylococci and corynebacteria* in vitro *(Table 1)*

—— *penicillin-susceptible staphylococci* in vivo *(Figure 1)*

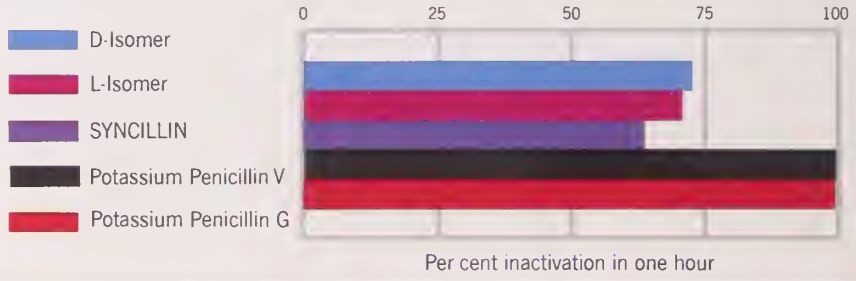
—— *penicillin-resistant staphylococci* in vitro *(Figure 4)*

ISOMERIC COMPLEMENTARITY SHOWN BY REDUCED RATE OF INACTIVATION BY PENICILLINASE

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms.[4] As shown in Figure 5, SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers – a further demonstration of isomeric complementarity. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V and penicillin G.

Resistance to SYNCILLIN develops in a slow, step-wise manner characteristic of other penicillins, in contrast to the usually rapid development of resistance to streptomycin.

FIGURE 5—Effect of Staphylococcal Penicillinase on Different Penicillins

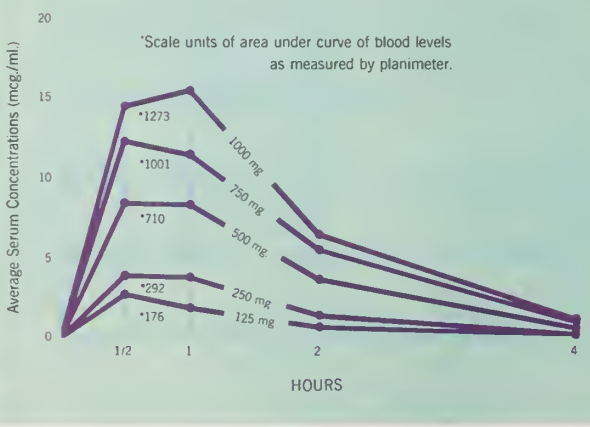


ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSAGE

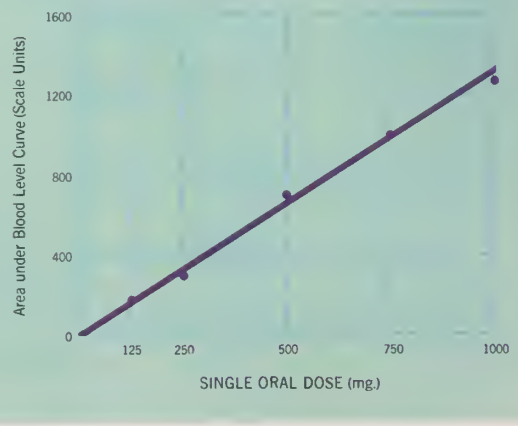
Cronk[5] studied blood levels after administering varying amounts of SYNCILLIN. (Figure 6.) Total antibiotic activity (obtained by measuring areas under curves with a planimeter) increases rapidly as the dose is doubled. These data show that increased dosage markedly increases serum concentration and thus may enhance the drug's effectiveness.

FIGURE 6

Serum Levels With Varying Dosage



Antibiotic Activity With Varying Dosage



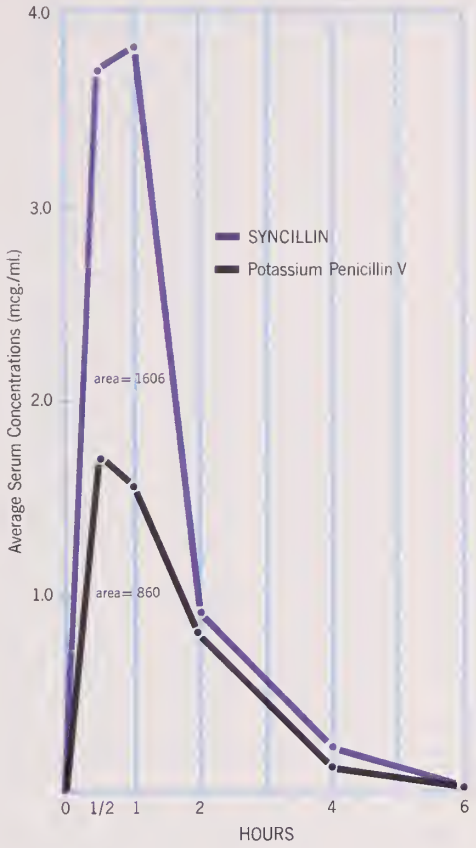
BLOOD LEVELS TWICE AS HIGH AS WITH POTASSIUM PENICILLIN V AFTER ORAL ADMINISTRATION

Wright[6] performed comparative crossover blood level studies on volunteer subjects receiving equivalent amounts of potassium penicillin V and SYNCILLIN. The peak concentrations attained during the first hour after administration were twice as high with SYNCILLIN.

The total antibiotic activity as measured by the area under the curves (see Figure 7) indicates an almost 2 to 1 superiority of SYNCILLIN (1606) over potassium penicillin V (860).

The higher blood levels may be of value with organisms of only moderate penicillin-sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition these higher levels may be necessary where there is infection in areas with a poor blood supply.[7] Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue.

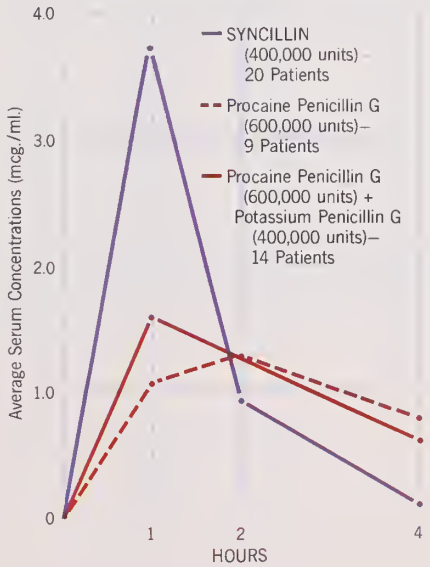
FIGURE 7
20 Subject Crossover
250 mg. Single Dose



BLOOD LEVELS MUCH HIGHER THAN WITH INTRAMUSCULAR PENICILLIN G

In addition, blood levels attained with oral SYNCILLIN[6] are much higher than those with intramuscular penicillin G.[8a, b] (See Figure 8.) Note that the level at one hour for SYNCILLIN (3.8 mcg./ml.) is more than twice as high as with procaine penicillin G, even when reinforced with potassium penicillin G (1.6 mcg./ml.). Since penicillins are *bactericidal,* these intermittent high serum levels can be clinically significant. Thus, SYNCILLIN offers the promise of superior efficacy via the safer oral route.

FIGURE 8—Serum Levels after Oral Administration of SYNCILLIN (250 mg.) and after Intramuscular Injection of Penicillin G



SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

REDUCED HAZARD OF SERIOUS ALLERGENICITY BY SAFER ORAL ROUTE

SYNCILLIN has been administered in multiple doses to 437 patients and volunteers. One patient developed itching during therapy, possibly an allergic side effect. Another had a purpuric rash, but no relationship to SYNCILLIN was established. No reactions were observed in 9 patients with a known history of sensitivity to penicillin.

While the above data suggests the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. *The usual precautions for oral penicillin therapy should be observed.* Patients with histories of asthma, hay fever, urticaria, or previous penicillin-sensitivity should especially be watched carefully. Since SYNCILLIN is administered orally, it may be expected to be safer than parenteral penicillin.

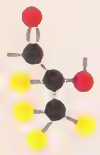
As Flippin[9] recently stated, ". . . it is well established that serious allergy to the drug [penicillin] is most likely to occur following parenteral administration, especially after repeated intramuscular injections; the oral route is least likely to initiate severe hypersensitivity reactions. This can be explained partly by the fact that when reactions develop following oral medication, they are usually slow enough to treat symptomatically; thus the progression of the reaction can usually be interrupted. . . . In view of the relatively high incidence of severe allergy to injectable penicillin, it would seem advisable to employ oral penicillin routinely, except in the control of infections involving the blood stream, endocardium, meninges, etc., in which cases the parenteral route remains the preferred treatment."

SYNCILLIN, like other penicillins, is essentially free of other toxicity. No hematopoietic, hepatic, or renal toxicity was observed in 210 volunteers receiving 1 gm. daily for 2 to 3 weeks.[10]

CLINICAL EFFICACY DEMONSTRATED IN PENICILLIN-SENSITIVE INFECTIONS

Clinical trials conducted by Blau and Kanof,[11] White,[12] Prigot,[13] Robinson,[14] Dube,[15] Ferguson,[16] Rutenburg,[17] Richardson,[18] Bunn,[19] Cronk,[5] Kligman,[10] and Yow [20] demonstrated the efficacy of SYNCILLIN in a variety of streptococcal, staphylococcal, pneumococcal, and gonococcal infections. Conditions treated included respiratory, skin, soft tissue, wound, and chronic urinary tract infections; acute gonorrhea; cellulitis; septicemia; otitis media; gingivitis; and Vincent's angina. In a few patients SYNCILLIN was used for rheumatic fever or gonorrheal prophylaxis.

One hundred seventy-two of one hundred ninety-six patients responded favorably to SYNCILLIN. The failures included 1 patient with pustular dermatoses, 10 elderly patients with chronic urinary tract infections, 1 patient with gonorrhea, 1 patient with a gram-negative infection, and 10 patients with staphylococcal infections. Lack of response of staphylococcal infections was attributed to the presence of resistant organisms or local suppurative foci requiring drainage.



Relatively few side effects were encountered. One patient experienced moderate itching of the skin which was controlled by an antihistamine. Another reported pruritus ani which did not interfere with therapy. Diarrhea occurred in 4 instances. There was one purpuric rash, but no relationship to SYNCILLIN could be established.

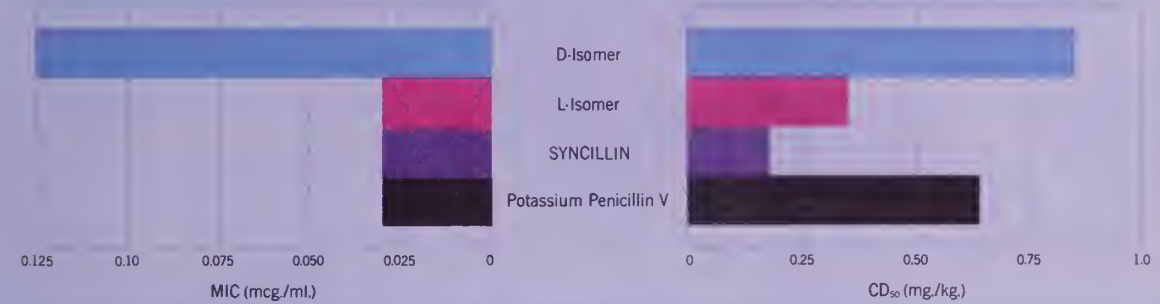
Clinical response usually begins within 24 hours in infections susceptible to SYNCILLIN. Recovery occurs in 4 to 7 days depending upon the severity of the infection. Gonorrheal infections respond very promptly to SYNCILLIN; 500 mg. b.i.d. for two days usually produce bacteriologic cures.

IMPROVED ANTIBIOTIC EFFECT FROM COMPLEMENTARY ACTION OF ISOMERS

SYNCILLIN is a mixture of isomers. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. Furthermore, the D- and L-isomers have other distinguishing chemical, pharmacological, and microbiological properties. Their *in vivo* and *in vitro* activities differ for many important pathogens. *Against many of the organisms tested, the combination of isomers* (SYNCILLIN) *is much more active than the stronger isomer alone.* This phenomenon of isomeric complementarity is not always demonstrable, for in a few instances SYNCILLIN is slightly less active.

Isomeric complementarity has previously been demonstrated *in vitro* (Figure 4) and *in vivo* (Figure 1). Figure 9 reveals a third form of superiority related to isomeric complementarity. Equal concentrations of SYNCILLIN and penicillin V were required to inhibit this growth of staphylococci *in vitro*. But, *in vivo*, a much smaller amount of SYNCILLIN *(one-third that of penicillin V)* was effective in an experimental infection with the same strain. These observations on complementary action indicated the advantage of producing the mixture of isomers as the medication to be made available for clinical therapy.

FIGURE 9 — Comparison of CD_{50} and MIC Values Against *Staphylococcus aureus* (var. Smith)



Isomeric complementarity has thus been demonstrated for:

— *certain penicillin-susceptible streptococci, staphylococci and corynebacteria* in vitro *(Table 1)*

— *penicillin-susceptible staphylococci* in vivo *(Figures 1 and 9)*

— *penicillin-resistant staphylococci* in vitro *(Figure 4)*

— *staphylococcal penicillinase antibiotic inactivation (Figure 5)*

Indications:

SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective against certain strains of staphylococci resistant to other penicillins.

SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage:

125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals.

Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions:

While present data suggest the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. *Therefore the usual precautions with oral penicillin therapy must be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, the interval between dosages should be lengthened.

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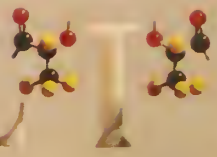
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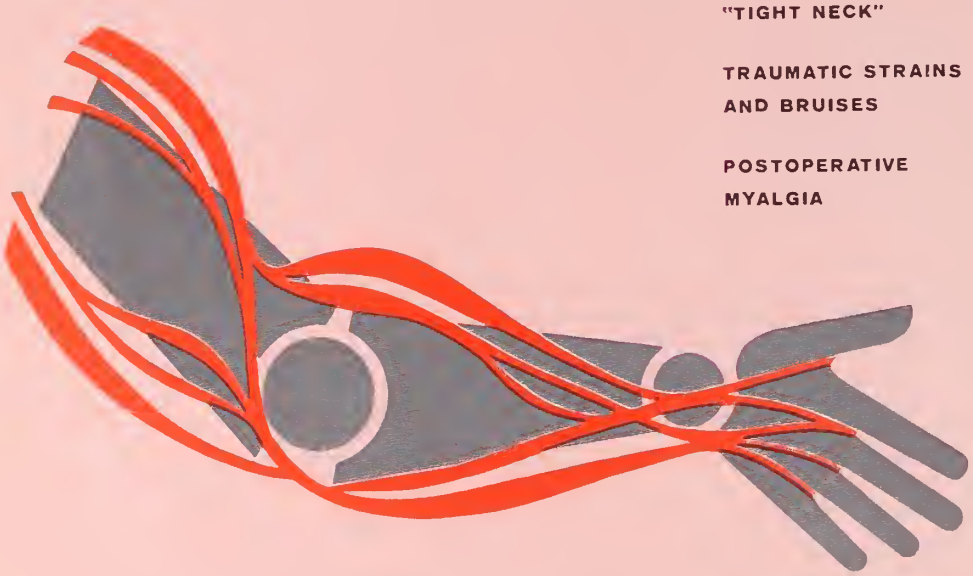
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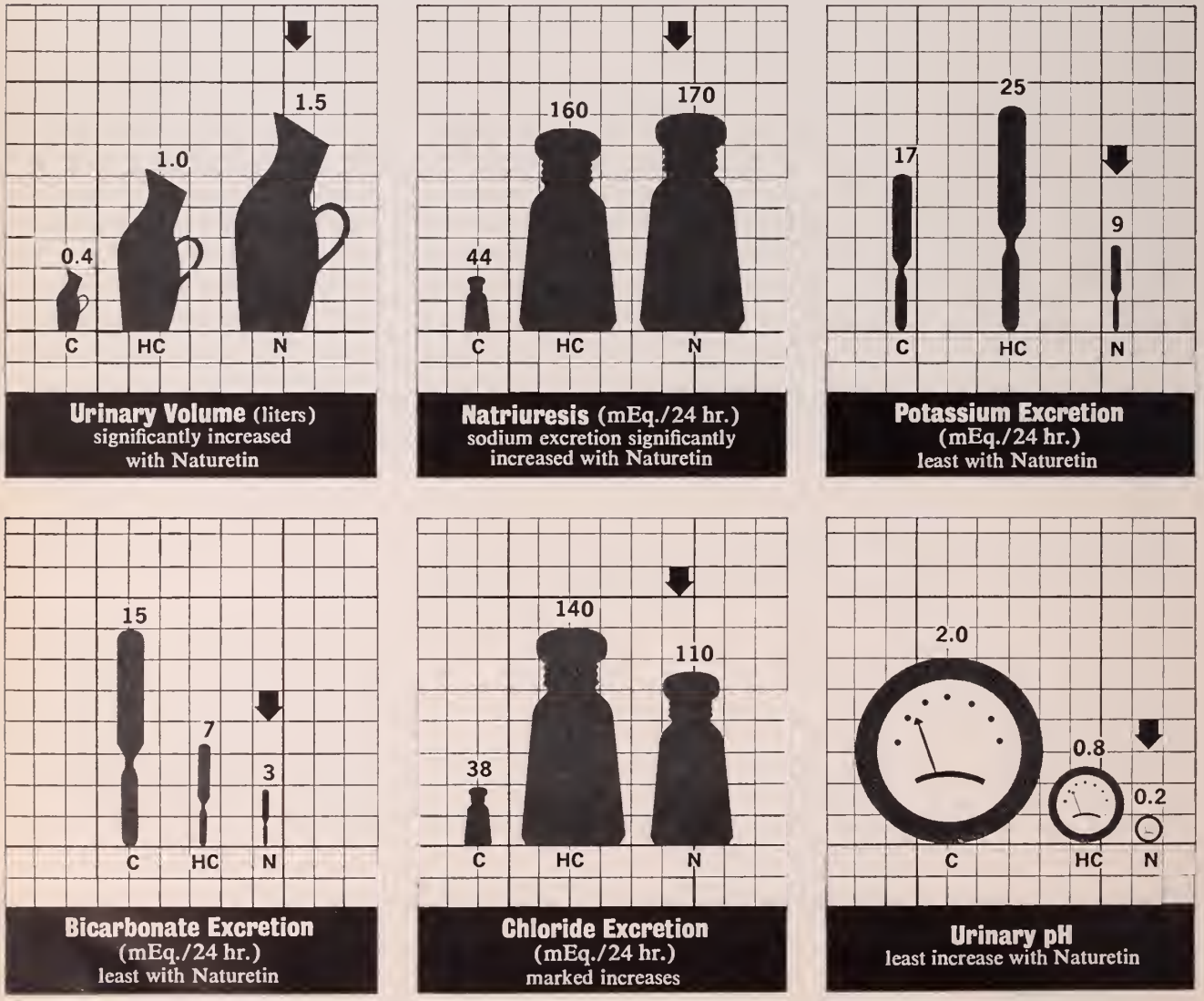
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Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin[1]



Typical Doses: Chlorothiazide—1,000 mg.; Hydrochlorothiazide—50 mg.; Naturetin (Benzydroflumethiazide)—5 mg.

1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959.

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- low toxicity — few side effects — low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other anti-hypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2]Reports (1959) to the Squibb Institute for Medical Research.

Naturētin —*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin —*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an anti-hypertensive regimen with other agents, lower maintenance doses of each drug should be used.

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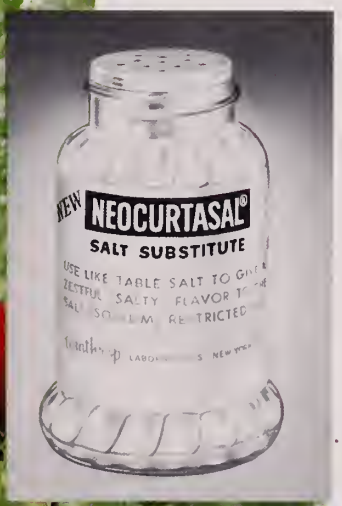
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Bagnall, A. W. (Univ. British Columbia, Vancouver, B.C.): A.M.A. Clinical Meeting (Scientific Section, Exhibit No. 124), Minneapolis, Minnesota, Dec. 2-5, 1958.

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Scherbel, A. L.; Harrison, J. W., and Atdjian, Martin: Cleveland Clin. Quart. *25:95, April, 1958.*

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Cramer, Quentin (Kansas City): Missouri Med. *55:1203, Nov., 1958.*

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JANUARY, 1960

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The Subhepatic Cecum*

• The author reports an occasional anomaly, which complicates surgery for associated abdominal disease.

H. ALLEN KING, M. D. †
Shreveport

THREE embryological accidents lead to placement of the cecum in the right hypochondrium.[5] The first, complete failure of the proximal colon to descend after rotation, is rare and almost always associated with other anomalies. The second, hypofixation, allowing various degrees of mobility of the terminal ileum, cecum, and ascending colon, will rarely, if ever, result in wandering of these organs to the upper right quadrant. The third, premature fixation, occurs often enough to be occasionally encountered by every abdominal surgeon. Attention is directed to this latter type because of its interesting pattern and frequent association with serious abdominal disease.

Review of Embryology [1, 5]

Briefly, rotation may be considered to end during the fifth month of pregnancy when the originally left sided proximal colon lies across the abdomen with the cecum placed under the right lobe of the liver. Normally, descent of the cecum from this location to its proper position in the iliac region, is accomplished between the eighth month and term. Fixation, in which the right mesocolon is lost and the ascending colon becomes adherent to the posterior abdominal wall, may not be completed until the fourth month after birth. This latter process, subject to many variations, also occasionally involves the terminal ileum so that it is likewise attached posteriorly.

Several years ago, while studying 6 cases of appendicitis in the subhepatic area, we were impressed by a striking likeness of anatomical features.[2]

"Generally speaking, the cecum and base of the appendix were incorporated within and behind the anterior fold of visceral peritoneum, pointing upward and/or medially toward the gallbladder and pylorus. The right colon dropped for a short distance as a festoon, redoubling upon

* Presented at the Twelfth Annual Meeting of the Surgical Association of Louisiana, New Orleans, November 8, 1959.

† From the Surgical Service, Veterans Hospital, Shreveport, La.

itself to join the hepatic flexure. There was no shortening of the ascending colon. The terminal ileum lost its mesentery near the normal site of the ileocecal junction and extended upward in a fixed posterior position to meet the high cecum, entering from behind and medially. The blood supply of the cecum and appendix followed the ileum upward retroperitoneally."

This was, of course, subject to individual variations.

We have since then encountered 4 additional similar cases, associated with abdominal disease. All were the result of premature fixation.

Complications

Appendicitis is frequently associated with subhepatic cecum and, because of the unusual location of the appendix, may cause considerable embarassment.[2] Pain and tenderness occurring in the right abdomen at the level of the umbilicus, lead to employment of an ordinary low appendiceal incision. Upon noting absence of the cecum in the lower right quadrant, loss of mesentery of the terminal ileum, and a high-looped ascending colon, this incision should be immediately closed and the subhepatic area explored. Since the cecum and appendix are often both incorporated within the peritoneal fold, there may be no meso-appendix and care must be taken to identify both the posteriorly located appendiceal artery and terminal ileum, before removal of the diseased appendix. The otherwise uncomplicated subhepatic cecum should not be disturbed in this procedure.

A free, looped right colon hanging as



Figure 1.—Subhepatic cecum, caused by premature fixation of the terminal ileum, cecum, and base of the appendix. The appendix lies transversely behind the gallbladder.



Figure 2.—Barium study of the lower ileum and subhepatic cecum. The fixed terminal ileum extends upward posteriorly to join the cecum. The right colon appears as a short free loop.

a festoon, with high fixation of the cecum at one end, closely approximated with a firmly fixed hepatic flexure at the other, strongly disposes to volvulus at the hepatic flexure. We have recently reported such a case and found a number of similar instances in medical literature.[3, 4]

Premature fixation may result in strangulation, especially after misguided attempts to place the cecum in the iliac fossa. Since the cecum may be firmly held in the upright position by posterior fixation of the terminal ileum, as well as the duodenorenal ligament, movement under such circumstances may be possible only after division and mobilization of the peritoneal reflection along the entire lateral abdominal gutter. Freedom of the terminal ileum and posteriorly placed blood supply should be insured before any attempt at placement of the cecum in the iliac region for cecostomy or any other purpose.

Summary

Subhepatic cecum is an occasional anomaly, usually caused by premature fixation. Recognition of its general pattern is essential for safe treatment of associated abdominal disease.

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A New Method for Detection*†‡ Of Intracranial Neoplasms

• An instrument for outlining radioactive material in brain neoplasms, and thus, a new medical tool is described.

CASWELL K. SMITH, M. D.
New Orleans

THE increasing incidence of intracranial neoplasms in our aging population and the obvious advantage of an earlier diagnosis makes the need urgent for a new diagnostic tool. The old diagnostic triad of headache, vomiting, and papilledema is seen as a rule only in the late stages of neoplasms, and presents no problem. The other complaints associated with intracranial neoplasms of headache, dizziness, and psychic and mental disturbances, form a major portion of the symptoms of patients seen by most medical practitioners, and for this reason this new tool must be a relatively benign procedure to screen out other pathologic processes with similar symptoms.

The electroencephalogram has proved of immeasurable help as a screening and diagnostic tool, but is not infallible, and false localization occurs in 10 to 20 per cent of cases. The risks of herniation in some brain tumors, the morbidity associated with the procedure, the necessity for hospitalization, the added difficulty of lack of filling of the ventricles in some patients with brain tumors and the difficulty in judging the size of the neoplasm, make pneumoencephalography an unwieldy tool.

The objections to arteriography are that it requires hospitalization, produces infarctions in patients with arteriosclerosis and rarely death, is occasionally difficult or impossible to perform with small vessels or if the lesion is located in the posterior cerebrum or posterior fossa, is painful when done with use of a local anesthetic, and gives no good indication of the size of the tumor.

Unstable Nuclides

Since the bombing of Hiroshima and the recent advances in radiophysics with the availability of fission by-products and induced radioactivity of elements by neutron bombardment or charged particles via the massive accelerators, such as the cyclotron, it was almost inevitable that a method would be devised for using these materials in the detection and treatment of neoplasms.

Fifteen years ago, there were ninety ultimate atomic elements. With the development of finer tools for measurements, and more powerful tools for investigation, there have now been described about 250 nuclides. A nuclide is defined as any atomic configuration capable of more than transient existence. The stable nuclides are, generally speaking, the chemical elements we all know so well. The unstable nuclides are those that undergo degeneration with the production of radioactivity.

In the breakdown of these unstable nuclides, alpha rays or the helium atom, beta rays or electrons, and gamma rays or electro-magnetic waves are produced. The penetrating powers of these rays vary. Alpha rays require only a sheet of paper to stop them, and beta rays, a few

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† From the Department of Neurology and Psychiatry, Ochsner Clinic, New Orleans.

‡ This work was done by Dr. G. M. Shy, Mr. R. B. Bradley, and Mr. W. B. Matthews [1] of the National Institute of Neurological Diseases and Blindness in Washington, D. C. My knowledge of the method was obtained in giving them technical assistance toward the termination of this work.

millimeters of aluminum, but gamma rays are reduced only by a few centimeters of lead. The alpha ray has found no use in neoplastic detection and the beta rays only limited use, as will be discussed later.

As the gamma rays penetrate other materials, their energy is absorbed in three ways. One is the Compton effect, in which the wave bounces off the nucleus to the side like a billiard ball, with slight loss of energy. The second effect is pair production, in which the entire energy of the wave is absorbed by the nucleus of the absorbing element, with production of a positive electron called a Positron, and a negatively-charged electron going in directions 180 degrees apart. The third is the photo-electric effect, in which the wave is completely absorbed by an orbital electron, which is then ejected with the energy of that wave.

Using radioactive tracer elements located in the neoplasm, either by specific uptake of this element or by increase in the permeability of the blood brain barrier around it, and then measuring the localized radioactivity became the method of choice.

History

Moore and associates [2] were the pioneers in this field. They used di-iodofluorescein labeled with iodine^{131}, and counted with the Geiger-Muller tube at several positions located around the skulls for three to five minutes. They believed that neoplastic tissue concentrated the dye up to eighty times that of normal, but also noted that edema and previous roentgen-ray radiation would likewise increase the uptake. They believed that they were able to localize neoplasms correctly in about 84 per cent of cases.

In 1950, Selverstone and coworkers [3] using P^{32} which is only a beta emitter, and an ingenious small Geiger-Muller tube, were able to locate increased uptake within several tumors. As P^{32} is only a beta emitter, this method, however, is of use only at the time of craniotomy and does not help with the problem as I have outlined it.

In 1951, Ashkenazy and associates,[4] utilizing a Geiger-Muller tube, a rate meter and a mechanical graph recorder, claimed accurate localization of brain tumors in 95 per cent of 340 patients. All 148 negative results in this group were confirmed by other technics as also negative. Subsequent investigators were unable, however, to obtain this degree of accuracy and some reported accuracy as low as 5 per cent.[5] Ashkenazy and coworkers emphasized the need for careful clinical correlation so that correct positioning of the detecting device could be utilized. They routinely surveyed 32 positions.

Measurement of Radiation

Some of the problems in using these methods have been the use of the Geiger-Muller tube, which has only 5 to 10 per cent efficiency and a poor resolving power.

The first named objection was resolved by perfection of scintillation counters. This method depends on the fact that when a gamma ray strikes a certain type of crystal called a phosphor, it causes emission of light in the crystal, taking this light to a photo-multiplier tube, which converts the light back to an electric pulse, which is proportional to the amount of light produced, and therefore the energy of the gamma ray. Thirty per cent counting efficiency is thus obtained.

Sweet and Brownell,[5] in 1955, solved some of the other difficulties by using the Positron emitter, AS-74, and a mechanical device known as an electronic scanner, which moved systematically over the head with two detectors 180 degrees apart simultaneously recording the areas with the relatively high radioactive counts. They were able to detect intracranial neoplasms in 75 per cent of cases.

The difficulty with their method was that the small crystal they had to use meant lowered sensitivity. In addition, maximum utilization was for coincidence counting, owing to radioactivity secondary to pair production, and meant that maximum utilization must be half-way between the detectors. The total number

of counts using this method of measurement of radioactivity requires almost nontracer levels of isotopes to produce sufficient counts.

Francis, Bell and Harris,[7] at the Oak Ridge National Laboratory, using a device called a collimator, which is roughly a cone-shaped piece of heavy metal with several focused tapered holes drilled into it, and placed over a large crystal, were able to count radioactivity from a preferred volume and owing to the shielding properties of the heavy metal, prevent external radiation from reaching the crystal scintillator.

In addition, they designed an instrument called a scintillation spectrometer, which is a quantitative method of measuring radioactivity, that not only indicates the presence of radioactivity, but also the energy of this distribution. One can thus pick out only those gamma rays that have not undergone any reaction within the body, and count only rays that lose their full energy in the crystal and thus tend to eliminate many spurious effects due to the inner action of gamma rays within body tissue.

Development of the Scanner

In 1957 and 1958, Shy and coworkers,[1] using these devices, designed their own equipment (Fig. 1) and experimented with various radioactive materials until an effective method was found. They redesigned the collimator of Francis and associates, changing the design of the focusing holes in the collimator, used gold instead of lead, which cut down stray radioactivity due to its increased density, and in addition, did not contain any radioactive impurities as uranium, which is of course the precursor of and present in all lead. With this collimator they obtained greater counting efficiency and resolution.

This collimator was placed over a one by three-inch NaI(Th) crystal which is cemented to the photo-multiplier window. Both of them are enclosed in a black metal box, which acts as a mechnical support for the crystal, prevents the crystal from taking up water, reflects any light proceeding

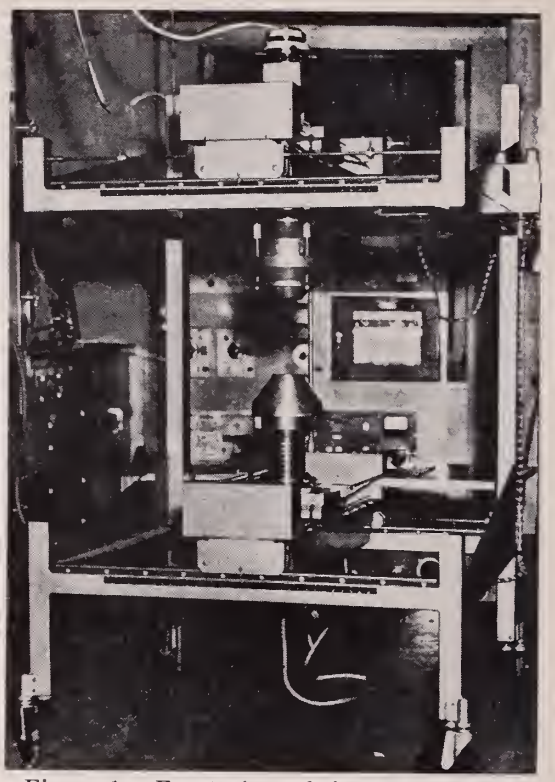


Figure 1.—Front view of the scanner devised by Shy and associates.[1] Note instrument panel to the rear. (Courtesy of Shy and associates [1]).

away from the photo cathode and lastly, shields any stray beta particles. The photo-multiplier is attached to a pre-amplifier, and an amplifier, which uses an external power source to multiply the radioactive effect, and then fed into the previously described scintillation spectrometer and attached dot recorder that maps out the amount of radioactive energy in various portions of the head.

The collimator over the crystal and photo-multiplier tube, which is connected to the pre-amplifier, is the scintillation probe. These are contained in a mechanical device known as a scanner. Actually, there are two scanners which are 180 degrees in opposition; this enables them to pass over two sides of the head at the same time and thus cuts down on the operating time of the instrument, the associated discomfort of the patient, and problems of prolonged technical endeavor.

These scanning devices are installed on a frame constructed of seamless cold drawn steel tubing 2 inches square. The

framework is about 5 feet high and 3 feet square. Each scanner rides on an indexing carriage mounting in the front and rear on roll bearings. These carriages are driven by constant speed motors which may be activated manually in orienting the patient with the machine, and automatically in running the scanning procedure. In addition, these probes are attached to the carriage by a cam lock, which may be unlocked for ease in aligning the probes when positioning the patient.

On the back of the frame that holds the scanners is a platform above which ride two solenoids which are activated by the electrical impulses due to the radiation and tap out in a dot pattern on a piece of paper the relative radioactivity over different portions of the skull. There is one solenoid, of course, for each probe. Behind the scanning frame is the instrument panel containing the two spectrometers, two scalers, two amplifiers, a Brown potentiometer and other electronic equipment as needed.

In order to suspend the patient's head between the two probes, an adjustable canvas head-rest in a metal frame fastened to the head of a standard hospital bed was constructed.

Choice of Nuclide

The final problem to be solved was the choice of a nuclide. The physical and biological half life, plus the type and energy of decay, were of both theoretical and practical importance. Preferably, the isotope should have a half life of less than ten days, and it should be a pure gamma emitter to avoid the ionizing radiation of beta or alpha particles. The isotope should be equally distributed in the body and eliminated from the parts of the body with the exception of the neoplastic tissue. If the energy or decay is excessive and the half life short (between eight and twenty-four hours), larger doses initially would be necessary. This would mean greater radiation hazard, and if the isotope's half life is ten or less hours, it would be necessary that the scanner be close to a place capable of producing a great deal of this nuclide. Of course, the constant demand for medical care around the clock necessitates that this isotope be available at all times.

Pharmacologically speaking, the ideal isotope should be taken orally, but if given intravenously, should be pyrogen free and should have no toxic effect. Zinc 69, for example, when given in adequate amounts, produces nausea, vomiting and diarrhea in about 40 per cent of patients. Another important factor is the concentration of this material within the neoplasm as against nontumorous tissue. The predilection of iodine for thyroid tissue is so high that only a fraction of the radioactivity can be counted. The zinc isotopes, zinc 65 and 69, have shown a predilection for melanoma, and Sweet and coworkers [6] believed that there is an increased uptake of copper and arsenic within neoplastic tissue, but as yet no specific radiotherapy of these tumors using these isotopes has been devised.

Finally, the expense of the isotope is a factor. It should be a commonly found element in nature which can be made unstable easily and cheaply. This is usually done by placement within a neutron flux, and does not require the costly and less reliable production by a cyclotron. Another consideration is the added expense of waste disposal.

Radioactive iodinated human serum albumin, or RISA, which is now being used in most larger hospitals for study of thyroid function and blood volume studies, easily fills all the necessary criteria. The 500 to 600 microcuries of RISA given to perform the ordinary scan is equivalent to about the amount of radiation received from standard roentgenography of the skull.

Scanning Procedure

In performing the original work on this apparatus, the investigators gave the patient the RISA intravenously about twenty-four hours before the scan. It is probable, from other experiments with concentrations of substances in the brain where the blood brain barrier has been

broken down, that a successful scan could be obtained in thirty to sixty minutes after the substance had been injected. The apparatus was warmed up for thirty minutes to an hour before the procedure and the two scintillation counters were balanced against a known radioactive source to eliminate technical artefacts. The patient was placed on the bed with his head on the canvas frame and centered between the two scintillation probes. The scanner was then turned to automatic and allowed to run. With the two probes, it was possible to get anteroposterior and posteroanterior views simultaneously in about twenty minutes. The patient was then placed on his side, again centered and the scanner turned to automatic. Again about twenty minutes were required for scanning and obtaining right and left lateral views.

The scalers on the instrument panel recorded the total number of relative counts from the two sides. The scalers can be set to record every fourth to two hundred and fifty-sixth count. Every sixteenth count was most often used through this work, since it seemed to give the best results. The total counts from radioactivity are tabulated from each side by the scalers.

A dual pen Brown potentiometer is connected to the rate meter and each of the spectrometers, and is so set that the same count rate gives the same chart deflection. This permits comparing the output of the two channels on the scintillation probes as they move over different areas of the patient's head. It is thus possible to note a significant increase in activity over one portion of the head on one side as compared with the other, and this can be readily seen on the chart.

Normal Scan

Since all tissues take up isotopes in varying concentrations, the rapidity of appearance and the concentration of the isotope is dependent upon the affinity of the tissue for the selected substance and the natural barriers that exist. Under ordinary biological conditions, therefore, it was possible to map a normal distribution for RISA over the human skull.

Since, in general, albumin is concentrated in the blood, the portions of the human anatomy with the largest blood concentration should have the highest radioactivity. In general, this was found to be true in the normal subject. On the anterior-posterior view, the lower end of the cranium was outlined by the muscles of the tongue, pharynx, larynx and mucous membranes of the nasal turbinates. The large venous superior longitudinal sinus was outlined in the center of the cranium. Posteriorly, the heavy neck muscles in their attachment at the lower end of the occipital bone, served as an outline with the superior longitudinal sinus again being prominent in the center superiorly. Laterally, over the top of the skull, there was a cap owing to radiation within the gales aponeurotica and the superior longitudinal sinus, and inferiorly because of the frontal, temporal, sternocleidomastoid and lateral musculature of the neck. Fortunately, therefore, the cerebral hemispheres were more or less outlined as areas of decreased activity. Though this area of decreased activity in the cerebral hemispheres made identification of neoplasms easy here, the concentration below this made deep midline cerebral tumors and deep posterior fossa tumors difficult.

The normal scan was statistically analyzed in 15 subjects, and if the scan was unequal, this permitted one to judge at the 95 per cent confidence limit that the scan was abnormal. It was necessary that this difference show up in two or more projections before this confidence limit could be set.

Results

In the original investigation on this apparatus, 179 successive scans were used. There were 89 negative and 90 abnormal scans. The scans were confirmed as abnormal in the case of neoplasms within the brain, if such abnormality was seen in operation or at postmortem examination. In the case of metastatic neoplasms to bone, such abnormality was confirmed

by erosion in roentgenograms, and in major vascular accidents to the brain it was said to be confirmed by subsequent atrophy as demonstrated by pneumoencephalography or at postmortem examination. Negative scans were declared confirmed if so found by the surgeon at operation, or by the pathologist at postmortem examination. With these criteria, of the 179 scans 106 were confirmed. In the confirmed group the accuracy rate was 86.6 per cent. There was a false negative group (14 of the 179 scans) or a failure incidence of 7.8 per cent. If all the unconfirmed cases were missed, there would be a minimal accuracy rate of 51.1 per cent; if all were confirmed, a maximum accuracy rate of 92.2 per cent. It is highly improbable that all these cases were missed, since many of these patients in whom the scan was read as negative were sent in as having "possible pathology within the cranium," but there were not sufficient clinical criteria for surgical exploration or pneumoencephalography or arteriography. Only time will answer this question.

Of the 14 cases that were improperly recognized by this technic 2 were false positive, and 12 false negative. Of the false negatives, 2 were done early in the study, using zinc 65 as the isotope, with collimators of early design. One was subsequently confirmed. Four were in the sella, parasella or deep cerebellar hemispheres and were definitely missed. Of the remaining 4, one was a case of syringomyelia of the cord, another had three small hemorhages at postmortem examination two weeks after the scan, another had multiple small metastases at postmortem examination, and the last had previously had removal of an astrocytoma and so must be counted a miss.

Though the usefulness of this machine has been proved by these figures, all the potentialities have not been explored and even more accurate determinations may be possible with more use and improved technic. Already positive results have been obtained when results of pneumoencephalography and arteriography were negative one week previously, equivocal pneumoencephalograms have been confirmed and positive localization of neoplasms that a neurosurgeon could not see grossly at the time of craniotomy have been made by use of this machine.

Summary

An instrument for outlining radioactive material in brain neoplasms and thus a new medical diagnostic tool has been described. By this technic the morbidity and mortality rates, and necessity for hospitalization required by the older technics of arteriography and pneumoencephalography are avoided. A confirmed accuracy rate of 86.8 per cent has thus far been achieved.

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Critique of Oral Hypoglycemic Agents*

• Although the oral drugs have a limited use in the control of hyperglycemia, their introduction has stimulated research into many unsolved problems of diabetes mellitus.

IRVING SINGER, M. D.
Lake Charles

THE introduction and subsequent widespread use of the hypoglycemic sulfonylureas has been of inestimable comfort and convenience to many diabetic individuals. In addition, and perhaps more important, study of the mode of action of these drugs has necessitated re-examination of what is known of the basic biochemical mechanisms of diabetes mellitus and has stimulated new research approaches to the many unsolved basic problems of this complex disease.

Biguanidine Compounds

An additional result of the success of the sulfonylureas has been the stimulation of study of other compounds, unrelated chemically to the sulfonylureas, which have hypoglycemic properties. Among these, the biguanidine compounds have received the greatest attention and are currently undergoing very active clinical and laboratory investigation. These compounds are distant chemical cousins of the diguanidine, Synthalin, which enjoyed a temporary vogue in diabetic therapy of the late 1920's. Use of Synthalin was abandoned because of its toxicity. The biguanidine chemical structure would appear to be inherently much less toxic than that of Synthalin as evidenced by the wide margin of safety noted with the antimalarial biguanidine, Paludrine. Unlike the sulfonylureas, the biguanidines appear to be hypoglycemic even in the absence of insulin and of pancreatic beta-cells. Their hypoglycemic action is believed to be due to an inhibitory effect on certain respiratory and oxidative enzymes resulting in decreased gluconeogenesis, decreased hepatic glucose output, and increased anaerobic glycolysis with the net effect being a decrease in blood sugar levels.[1-4] The biguanidines, therefore, are not substitutes for insulin in the sense of reproducing its actions, and they do not stimulate insulin production, enhance its action, or inhibit its degradation.

In clinical trials, the biguanidines have been found to be effective in both juvenile and maturity-onset type diabetes,[1, 2] They appear to have a special usefulness when administered in conjunction with insulin to "brittle" diabetics subject to wide swings in blood sugar concentration and frequent insulin reactions.[1, 3] It has been possible in a small number of such cases to decrease insulin requirements by one-half to two-thirds by administration of 200 to 400 mgm, of DBI (phenylethylbiguanidine), thus avoiding insulin reactions while maintaining reasonable control of the diabetes.[5] Combinations of phenylethylbiguanidine plus a sulfonylurea have been employed in a small group of patients in whom sulfonylurea therapy alone was unsuccessful. An additive effect with no increase in toxicity was noted.[6]

However, despite the absence so far of serious toxicity, the biguanidines presently under study appear to have a very limited field of usefulness because of the high incidence of gastrointestinal distress encountered with their use. Gastrointestinal symptoms have occurred in up to 75 per cent of cases treated and have been of such severity as to require stopping therapy in many instances.[3] Nausea, vomiting, diarrhea, and anorexia have occurred early in the course of treatment, and in some pa-

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tients who escape these early symptoms a peculiar late effect appears after four or more weeks of therapy consisting of weight loss, weakness, lethargy and malaise which is relieved by discontinuing the biguanidine therapy.[2] Acidosis in the absence of hyperglycemia and glucosuria has been reported as occurring during the use of biguanidine therapy.[4]

The biguanidines have been described as "enigmatic compounds which are discouraging because of high incidence of side effects and rewarding when an otherwise unstable diabetic with almost incapacitating insulin reactions becomes better regulated on a lower dose of insulin plus "DBI".[3] A definite, though limited, usefulness in selected cases of severe diabetes appear to be the role these drugs will assume in clinical medicine.

Sulfonylureas

The sulfonylureas have been clearly established as effective hypoglycemic agents in a large proportion of cases of maturity-onset type diabetes, particularly those cases wherein insulin requirements are relatively low and stable.

The details of clinical use of the sulfonylureas have been fairly well defined. There is a tendency to prescribe tolbutamide in divided daily doses, in distinction to the original loading doses technique.[7, 8] With chlorpropamide and metahexamide, a single daily dose seems to suffice as these compounds are not destroyed and excreted as rapidly as tolbutamide — a characteristic which seems to be the major difference between these newer therapeutic agents and tolbutamide.

The limitations of the sulfonylureas are well known by now to all who treat diabetics. These drugs are generally agreed to be ineffective as hypoglycemic agents in young and/or severe diabetics, and in the presence of ketosis. Isolated case reports of a beneficial effect of tolbutamide upon cases of labile diabetes and insulin-resistant diabetes are difficult to evaluate in view of the intrinsic unpredictability of the insulin requirements in such cases. In this report, a considerable placebo effect of tolbutamide has been demonstrated in double-blind studies.[9] This placebo effect has not received the attention it probably should in many clinical reports on the efficacy of this agent. Similarly, the "increased sense of well-being" described in some reports is hard to evaluate without full consideration of the psychological factors involved in substitution of a pill for the needle.

Continued experience with the most widely used sulfonylurea, Tolbutamide, has indicated that up to one-third of patients placed on the drug relapse at some time after the first thirty days of therapy.[7, 8] These cases have been called "secondary failures" in distinction to cases in which an unsatisfactory clinical response within the first few weeks of attempted oral therapy has led to abandonment of the trial. The secondary failures are due in large part to dietary deviations and infractions, but a "true" secondary failure rate of about 7 per cent does exist.[8] The cause of these true secondary failures is obscure. Insulin requirement after secondary failure is about the same as before oral treatment—suggesting that pancreatic beta-cell injury or exhaustion as a result of the oral treatment is not the causative factor. The placebo effect of tolbutamide referred to above has been suggested to be a possible explanation for some of the secondary failures.[9] That is, the possibility is raised that tolbutamide was not really effective in the first place in some cases, but that placebo effect was observed and initially interpreted as a successful response.

Diet

The high total secondary failure rate has served to reemphasize the continued and fundamental value of the dietary regime in the management of diabetes mellitus. Diet is all important in therapy with sulfonylureas. In the case of insulin treatment, dietary indiscretions can be counterbalanced to some extent by administration of a large dose of insulin. This is not true with the sulfonylureas — an increase in

dosage will not allow an increased food intake.

Side Reactions

The relatively low incidence of acute toxicity encountered with the sulfonylureas seems well established. Toxic reactions have occurred in something less than 3 per cent of cases and have, in general, been of minor importance.[10] Skin reactions have been most commonly reported. Gastrointestinal symptoms have been noted to occur particularly in patients with a previous history of such symptoms, and the exacerbation of duodenal ulcer in two cases coincident with tolbutamide administration has led to the suggestion of a need for caution in use of these drugs in the presence of gastrointestinal disease.[11] The incidence of hypoglycemia with the sulfonylureas is low, but not nonexistent.[8, 12, 13] Slight elevation of the serum alkaline phosphatase after approximately a month of tolbutamide therapy has been observed, and while not associated with any other evidence suggestive of hepatic damage may constitute a potential source of clinical confusion.[5] Intrahepatic obstructive jaundice with associated elevation of the serum alkaline phosphatase has been observed in conjunction with chlorpropamide therapy. The question of long-term hepatotoxicity must wait prolonged use of the sulfonylureas.

An unusual untoward occurrence during oral hypoglycemic drug therapy is the case in which the patient accidently swallowed a Clinitest tablet instead of a tolbutamide tablet, and developed an ulcerative lesion of the esophagus with associated severe exacerbation of diabetes.[14]

Mode of Action

The mechanism of action of the sulfonylureas has been the subject of much study. As yet, no clear-cut answer is available to the question of where and how these compounds act. Studies of alloxan-diabetic animals plus observation that pancreatectomized patients and juvenile diabetics fail to respond to sulfonylurea administration has established that functioning pancreatic beta-cells must be present for effective hypoglycemic action of the sulfonylureas to manifest itself in vivo. Most experimental support has been received by the hypothesis that these drugs act primarily by stimulating pancreatic beta-cells to secrete or release an extra amount of insulin. Such extra insulin would be expected to result in an increased peripheral utilization of glucose via the primary action of insulin to facilitate glucose transfer into muscle cells. Yet extensive and repeated studies of the usual parameters of peripheral glucose utilization have failed to reveal the expected increase following sulfonylurea administration. This seemingly leads to an impasse—a need for a source of insulin yet no observable effect of the extra insulin supply postulated to be released by the source following sulfonylurea administration.

This impasse has led to reconsideration in the laboratory of the mode of action of insulin. The results of this reconsideration have been such as to at least modify our ideas of insulin action. The demonstration that injection of insulin into the portal vein results in a hypoglycemic effect without an increase in peripheral glucose utilization,[16] and the fact that if parenterally administered insulin is given slowly enough similar results are obtained,[17] suggests that endogenously produced insulin, at least, exerts a primary effect on the liver. These facts strongly imply that the sulfonylureas do act by increasing endogenous insulin production and that the insulin so produced causes a fall in blood sugar by lowering hepatic glucose output without affecting peripheral glucose utilization. This concept has received additional support by in vitro demonstrations of a direct effect of insulin on liver carbohydrate metabolism.[7]

A direct and specific effect of tolbutamide on certain hepatic enzyme systems resulting in increased liver glycogen formation has been demonstrated.[7] This observation has explained some of the findings after acute administration of tolbutamide which differ frankly from insulin

effects. The significance at the clinical level of this effect of tolbutamide is not clear in view of the apparent necessity for presence of pancreatic beta-cells if sulfonylureas are to be hypoglycemic in vivo.

As the mode of action of the sulfonylureas gradually becomes clearer, it also becomes apparent that the study of these compounds will directly and indirectly lead to further clarification of the biochemical lesions of diabetes mellitus and of insulin actions. The studies so stimulated may well lead to contribution of much greater ultimate clinical importance than that of the sulfonylureas themselves.

Role in Therapy

While awaiting these anticipated advances in knowledge and therapy of diabetes, the sulfonylureas are being widely used. Despite the relative unanimity of opinion concerning their efficacy and limitations, there is a surprising amount of controversy concerning the role these compounds should play in clinical diabetes today and their significance in the long term management of the diabetic state. Insulin therapy, although not free of problems, will control hyperglycemia and ketosis in all diabetics regardless of age and, in addition, has beneficial effects upon protein metabolism and upon growth of childhood diabetics. A true oral substitute for insulin should be capable of reproducing all of the beneficial effects of insulin on the diabetic organism. It has never been claimed that the sulfonylureas are a substitute for insulin in this sense. However, the sulfonylureas will effectively lower the blood sugar in most cases of maturity-onset type diabetes of mild to moderate severity and these cases comprise the majority of all cases of diabetes. Should sulfonylurea therapy then be considered to be equivalent to or superior to insulin therapy in this large and important group of diabetic patients?

There are those who feel that sulfonylurea therapy should take precedence over insulin therapy in diabetics of this type wherever clinical trial of the sulfonylureas results in control of hyperglycemia. Besides the convenience of oral administration, the relative lack of hypoglycemic reactions, "smoother control" of blood sugar levels, and an intangible "feeling of well-being" are cited as advantages of sulfonylurea therapy.

At the opposite extreme are those who consider these compounds at the clinical level to be primarily an optional convenience to be used only in a relatively few cases where special conditions exist making indicated insulin therapy impractical or unduly difficult. That is, given a case of diabetes with onset after maturity and uncontrolled by diet alone, advocates of this viewpoint would substitute a sulfonylurea for insulin only if insulin could not conveniently be used because of blindness, crippling arthritis, paralysis, or other handicap.

This wide divergency of viewpoints is undoubtedly due to our incomplete knowledge of the etiology, pathogenesis, and biochemical pathology of diabetes mellitus. The question which must be resolved before we shall know which of the two extreme positions cited is more correct is whether control of hyperglycemia and control of diabetes mellitus can be considered one and the same. Superficial consideration of this question would indicate that they are not the same thing in view of insulin's relatively wide range of effects on diabetes aside from its effect on blood sugar levels. However, the investigations into the mode of action of the sulfonylureas (*vide supra*) at least suggest the possibility that a differentiation between the actions of endogenous and exogenous insulin may have to be made. In such event, the sulfonylureas might be considered as reproducing insulin activity and effects up to a limiting point, i.e., reproduction of insulin effect upon liver carbohydrate metabolism but not upon peripheral glucose utilization, growth, etc. This point of limitation may be insignificant in many diabetics. In these diabetics the sulfonylureas may control the disease in the same sense as insulin does.

The question of an actual distinction between endogenous and exogenous insu-

lin must await clarification and proof in the laboratory. The bulk of evidence at present supports the classic concept that the hyperglycemia of diabetes mellitus is due to decreased peripheral utilization of glucose as a direct result of insulin deficiency—relative or absolute. According to this classic concept, the decreased peripheral utilization is a primary metabolic defect corrected by insulin administration, and hyperglycemia is a conveniently measured laboratory sign of the underlying metabolic defect.

Because of the convenient measurability of the blood sugar level, it is commonly used as an index of degree of control of the more basic defect in glucose utilization. We are all aware of the fallacy of invariably considering alteration of a symptom or sign as correction of an underlying pathologic process. Should we not then be cautious in interpreting alterations in blood sugar levels as control of diabetes mellitus? Indeed, the point has been raised that lowering the blood sugar of a diabetic may actually be harmful to the individual if such lowering is obtained by means other than the effect of insulin on peripheral utilization of glucose.[18] This would appear to be a distinct possibility if, as some have contended, the hyperglycemia of diabetes mellitus is actually a compensatory mechanism facilitating, by mass action, the transfer of glucose into skeletal muscle cells, thereby approaching closer to the rate of glucose utilization of the nondiabetic. Unless and until the sulfonylureas are clearly shown to exert their hypoglycemic effects by favorable modification of an underlying metabolic defect, it would seem wisest for the individual clinician to employ these agents cautiously and with an expectant attitude toward further clarification and delineation of their precise role in clinical diabetes.

Only long-term studies can indicate whether use of the sulfonylureas in place of insulin will influence the incidence, degree, and time of occurrence of the degenerative complications of diabetes. Whether or not one accepts the evidence indicative of a beneficial effect of close control of diabetes, with diet and insulin, on the incidence and age of onset of these degenerative complications, our present day therapy leaves much to be desired in terms of abolishing premature arteriosclerosis and diabetic neuropathy, nephropathy, and retinitis. The resurgence of interest in investigation of both the basic lesions of diabetes and the actions of insulin, stimulated in large measure by the introduction of the sulfonylureas, should result not only in development of new oral agents for treatment of the malady but in more understanding of the pathogenesis of the long-term complications of diabetes and of therapeutic measures which will be effective in preventing their appearance or halting their progression.

Summary

The principal classes of oral hypoglycemic agents in use and/or under study today have limited, though ill defined, roles in the management of clinical diabetes. More precise definition of their position must await further clarification of their mode of action and the results of long-term studies of their ultimate effects upon the diabetic patient.

Clinicians should exercise cautious clinical judgment in the use of these drugs pending the outcome of further investigation and studies.

The long-term importance of the currently available oral hypoglycemic agents may well lie in the stimulus they have provided to research into basic biochemical lesions of diabetes and into the actions of insulin.

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Discussion

Douglas L. Gordon, M. D. (Baton Rouge): Dr. Singer has very excellently summarized the tremendous amount of material on this subject. These agents have been so recently used clinically as well as in research that it is quite difficult to predict the role for them in the future. I feel that at present their chief value lies in the research interest they have stimulated in the physiologic action of these drugs and in diabetes mellitus itself. In discussions with other physicians, the question regularly has come up with regard to the actual number of patients each physician is treating with the hypoglycemic agents in his own practice. In our area, at least, each physician has "two or three" patients on these drugs; whereas they have many taking insulin.

The best summary of the use with these drugs, I have heard, was during a recent panel discussion at the American College of Physicians' Meeting in Chicago. Dr. Garfield Duncan commented on the idealistic and the realistic use of these drugs. Idealistically, he felt 80 per cent of all diabetics were simply obese and did not require any treatment other than weight reduction. Five percent were juvenile diabetics, so not over 15 per cent of the overall number of diabetics would be candidates for these drugs. Allowing for those who would not respond to it probably only 10 per cent of the total diabetic population would use them. However, he felt from a realistic standpoint that probably 80 to 90 per cent of the diabetes were using the hypoglycemic agents.

In general, I would feel that any patient could be allowed the opportunity of a trial on these drugs if he or she requested it. If the patient responds to the therapy, then he has achieved a simpler and less troublesome method of controlling his diabetes. If he does not respond, then certainly no harm has been done by the therapeutic trial.

The only comment which I would make regarding any of these specific agents would concern DBI. It appears that its chief usefulness will be in possibly stabilizing the so-called brittle diabetic. In handling this situation it seems that adding DBI to a slightly smaller dose of insulin than previously required is the method of choice rather than attempting to control the diabetic patient entirely with the oral hypoglycemic agent.

Lastly, the most important point to be made in this discussion is to re-emphasize that the good principles of diabetic therapy such as maintenance of normal body weight, good dietary control, freedom from hyperglycemia and excessive glycosuria as well as freedom from hypoglycemic reactions should be achieved. If these principles are strictly adhered to there then will be relatively few instances for the actual use of these agents. In addition, the patients using the hypoglycemic drugs will be under much better physiologic control. Unfortunately, many patients have been given the drug to take orally and have neglected the diet, weight, exercise, urine checks for sugar, and have become uncontrolled diabetics. The lack of good control should certainly be frowned upon and the maintenance of excellent diabetic control utilizing the standard basic principles, whether insulin or the hypoglycemic oral agents are used, should be the chief point which one takes with him after listening to this critique on hypoglycemic agents.

Enteric Intussusception, A Postoperative Complication; A Case Report

• The etiology of intussusception is undetermined and the treatment may be conservative or surgical.

J. E. ISAACSON, JR., M. D.
New Orleans

EDGAR FEINBERG, M. D.
Bogalusa

H. REICHARD KAHLE, M. D.
New Orleans

MANY theories have been advanced regarding the etiology of intussusception. Most theories stemmed from the findings of Nothnagel,[1] in 1898, who postulated that intussusception resulted from intestinal spasm. He suggested that the contracted portion of the intestine (the intussusceptum) was propelled into the lumen of the normal intestine (the intussuscepiens) in a manner similar to a bolus of food. Others believe that intussusception results from excessive mobility of the intestinal tract; pathological abnormalities of the intestines such as enlarged lymphoid follicles, Meckel's diverticulum, and polyps; and a change of diet. However, according to Gross [2] and Orloff,[3] in most cases, no definite etiological agent or reason can be determined.

Types of Intussusception

The basis of classification of intussusception depends upon the relationship between the intussusceptum and the intussuscepiens. When the intussusceptum and the intussuscepiens are both small intestine, the intussusception is known as enteric. The enteric form includes duodenoduodenal or duodenojejunal (Lempke [4]), jejunojejunal, jejunoileal or ileoileal types. The ileocolic variety occurs when a portion of the ileum invaginates into the large bowel. When only the colon is involved, the classification is known as colocolic. In children, the ileocolic variety is the most common form, then the colocolic forms.

Treatment of Intussusception

The treatment of this disorder is based on the reduction of the intussusceptum from the intussuscepiens. This may be accomplished using hydrostatic pressure or manual reduction.

Hydrostatic pressure is administered under direct visualization of the colon during fluoroscopic examination, while a barium enema is being administered, first described by Hipsley [5] in 1937. Gross [2] is opposed to this technique since he feels that a considerable number of patients still come to surgery. Very often the attending physician is uncertain of the results, thus wasting valuable time depleting the patient's margin of reserve, which Kahle and Thompson [6] feel is the most common cause of death in this disease. Reduction past the ileocecal valve may be incomplete. Any existing polyp or diverticulum will thus be overlooked. Great care must be used while administering the enema, for the possibility of rupture of the bowel is a dangerous complication of this form of therapy.

The operative procedure consists of laparotomy with reduction of the intussusception by gently milking the intussusceptum backward with gentle compression of the intussuscepiens. At this

From the Independent Surgical Service of the Charity Hospital of Louisiana at New Orleans and the Surgical Service of the Washington-St. Tammany Charity Hospital in Bogalusa, Louisiana.

time one can examine the involved intestine to determine the presence of underlying pathology as an etiological agent or the presence of damage to the intestine such as gangrene. These conditions can then be corrected by appropriate means at the time of surgery.

Report of Case

L.D., a 3-year old negro female was brought to the clinic of the Washington-St. Tammany Charity Hospital with a history of generalized intermittent abdominal pain for four and one-half hours. The patient had been constipated for the previous two or three days. On the day of admission, she had general malaise and vomited once.

Examination revealed the following abnormalities: Temperature 103°(R); pharynx slightly injected; lungs clear to percussion and auscultation; abdomen moderately distended with hypoactive bowel sounds and occasional peristaltic rushes; no rebound tenderness, no rigidity; generalized tenderness was present; and rectal examination was negative.

Laboratory work was normal except for the following: Hemoglobin 8.6 gms., white blood count 18,700, polymorphonucleoleukocytes 75, lymphocytes 25. Urinalysis revealed 5-10 WBC/hpf (catheterized specimen).

Nasogastric suction was begun and the patient placed on intravenous fluids and antibiotics. The diagnosis of acute gastroenteritis versus early intestinal obstruction was entertained.

On the morning following admission (fourteen hours), some rales were heard in the chest and the x-ray picture of the chest resembled one of bronchopneumonia. However, no bowel sounds were heard. Temperature continued to be elevated. The abdomen was increasingly tender but no localized point of tenderness could be found. It was decided that the patient now had an acute surgical abdomen, probably resulting from an acute appendicitis, as well as the pneumonitis.

Sixteen hours after admission, an exploratory laparotomy revealed mesenteric lymphadenitis but normal intestine and appendix. No evidence of diverticula or polyps could be found. An appendectomy was done at the time. Postoperatively, nasogastric suction was maintained and the patient given tetracycline, and 300 cc. of blood.

Normal bowel sounds were heard the next morning so the nasogastric suction was discontinued and the patient begun on surgical liquids by mouth. The maximum temperature this day was 103°(R). On the second postoperative day the patient passed flatus and was given full liquid diet orally. In the afternoon, the abdomen became distended and again bowel sounds were absent. Nasogastric suction was reinstituted. The next day bowel sounds returned so the nasogastric suction was discontinued and the patient given water by mouth.

On the morning of the fifth postoperative day, the patient's abdomen again became distended. No bowel sounds could be heard so the nasogastric suction was restarted along with intravenous fluids. At 1:00 P.M., the patient seemed improved and bowel sounds were again heard. However, the patient was continued on suction. It was felt that the patient probably had a paralytic ileus secondary to the pneumonia. She continued to improve until the sixth postoperative day when, at noon, the abdomen became distended and bowel sounds were absent. Under fluoroscopic examination, a Miller-Abbott tube was inserted until the tip of the tube reached the pylorus of the stomach. At this time, fluid and gas were noted in the small bowel. She apparently improved, slightly, as the Miller-Abbott tube advanced for the next twelve hours; then, there was no further drainage. The patient was taken back to radiology where the tube was found coiled in the stomach. At this time the decision was made to bring the patient back to surgery.

Exploratory laparotomy revealed a six inch jejunojejunal type of intussusception which was reduced by gentle compression of the intussuscepiens. The remainder of the jejunum was decompressed and the abdomen closed in layers.

The postoperative course was uneventful. Oral surgical liquids were begun on the first postoperative day and diet progressively increased. On the seventh postoperative day, antibiotics were discontinued, and the patient was discharged from the hospital the next day.

Summary

This case represents an example of postoperative intestinal obstruction caused by jejunojejunal intussusception in a three year old child. Although the intussusception in this case, may have resulted from irritability of the bowel secondary to an enteritis, no definite etiological agent can be attributed to this particular intussusception.

The treatment, surgical intervention with the reduction of the intussusceptum, proved satisfactory.

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Historical Note

During the last two or three weeks, immigrants, chiefly Irish, have been flocking to our shores in great numbers; and as might be expected, many of those, who embark for our port, sicken and die during the voyage, of ship or typhoid fever—the result of a crowded state of the vessel, a limited supply of provisions, of a bad quality and neglect of personal cleanliness.

In the first place, these vessels are too much crowded; they should not be allowed to bring more than one third their usual number. The shipping agents at Liverpool, and the ports of Ireland, regardless alike of the comforts and lives of these people, drive them on board the vessel, like "sheep for the shambles," too often illy provided with the comforts necessary for sustaining healthful existence, and many of them, at the time of their embarkation, with the seeds of disease in their systems.

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Urinary Diversion

• The author reviews the many attempts at anatomical substitution of the normal urinary outlet, lists the indications, and describes the technique employed.

B. HOLLY GRIMM, M. D.
New Orleans

THE changing of the urinary outlet has posed a serious and perplexing problem to all surgeons who have encountered the need for interruption of the continuity of the normal urinary system. The ideal for which we all strive when urinary diversion is indicated would be simulation of the normal urinary system. That is, voluntary control of the urinary and fecal streams, which exist from a reservoir that permits intermittent emptying. Johnson's criteria included in addition separation of the fecal and urinary streams, an absence of reabsorption of urinary waste products, no artificial devices or orifices, the permission of cystectomy if indicated, and the ease of cystoscopic examination.

Historical

Since John Simon, a British surgeon, attempted to form a fistulous tract between an extrophy of the bladder and the rectum, in 1852, many surgeons have tried many and varied procedures on both animals and humans. Smith, in 1878, disconnected the ureters from the bladder and transplanted them. In 1888, Tizzoni and Foggi of the Royal University of Bologna successfully anastomosed the ureters to an isolated loop of ileum and this to the bladder neck in a dog. Using cadavers, Lotheison (1889) formed a rectal pouch by pulling the anterior rectal wall down through the anus. Also, using cadavers, Giordano (1892) performed a sigmoid colostomy and then attached the ureters to the isolated rectal pouch. Chaput, in 1894, discussed a type of ileal bladder but decided it was not practical. Mauclaire, in 1895, performed a sigmoid colostomy and transplanted the ureters into an isolated rectal pouch on dogs. Foges, in a report (1898), described an operation by R. Gersuny, a Viennese surgeon, in which the ureters were implanted into the blind rectosigmoid pouch and the proximal end pulled through the anal sphincter anterior to the anus. In 1898, Von Mikulicz utilized an isolated segment of bowel for enlargement of the bladder in humans. Remedi, (1905) and Kronig (1907) utilized a blind rectal pouch and a perineal colostomy. Berg (1907) reported 5 cases of ureteroileosigmoidostomy for bladder extrophy of which 2 were successful. Verhoogen (1908) unsuccessfully fashioned an ileocecal segment into a bladder substitute allowing the appendix to substitute for the urethra. In 1910, Makkas successfully performed this procedure. Heitz-Boyer and Hovelacque (1912) described a Gersuny type operation done by Marion and differing primarily by amputation of the coccyx and the placement of the perineal colostomy posterior to the anus.

In 1917, Kotzenberg reported an attempted Gersuny procedure. In this same year Neuhof was using free fascial grafts to repair segmentally resected animal bladders. Kirscher's attempt of this in a man with bladder extrophy was unsuccessful. Roosing (1918) reported a successful attempt of a rectosigmoid bladder and colostomy for extrophy of the bladder. Scheele (1923) and Sebening (1932) both reported on the use of ileal segments to enlarge the bladder. Lay (1925) attempted to use a gall bladder for a urinary bladder without success.

This trend of investigation and ap-

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proach to the problem was interrupted in 1928 when Robert C. Coffey perfected his ureterointestinal anastomosis to the intact bowel. However, continued follow-up of these patients revealed recurrent infection, stricture at the anastomotic site, and hyperchloremic acidosis. Cordonnier (1945), Nesbit (1945), Leadbetter (1950), and Mathisen (1953) have all attempted to eliminate these dire complications by different techniques while holding to the theory of Coffey of implantation of the ureters to the intact bowel, but none have been entirely satisfactory.

Bisgard (1943) and Rubin (1949), working with dogs, successfully attached an isolated segment of the sigmoid to the bladder neck.

Beginning in 1950, there have been many excellent reports on all phases of urinary diversion with each method having many advocates. Bricker used the isolated loop of ileum. Gilchrist, Merricks, Hamlin and Reiger utilize the cecum for a reservoir and the antiperistalsis of the terminal ileum as a continent urethra which requires intermittent catheterization for emptying; Lowsley (1953) and Levitski (1953) separately reported procedures for separating the fecal and urinary streams and utilizing the anal sphincter for continence.

At present the isolated ureteroileostomy is probably more widely used than the other bladder substitution procedures and the following discussion is primarily concerned with this operation.

Indications

In this era of increasing refinement of anesthesia, and surgical techniques, of the utilization of blood and antibiotics, the advocation of radical surgery has become more an everyday occurrence than in the past.

It is interesting to note that reference to actuarial tables reveals that an individual who has reached the age of 60 years has a life expectancy of 14.5 years, at 70 years a life expectancy of 8.9 years and at 80 years an expectancy of 5.0 years. These facts certainly have a bearing on the recommendations of the attending physician if there is a good chance of cure or complete relief of pain in the treatment of malignancy.

Malignant disease for which urinary diversion has been performed include:

Pelvic exenteration for cancer of the cervix or uterus with local invasion.

Cancer of the rectum with local invasion.

Cancer of the vagina with local invasion.

Advanced cancer of the bladder either in an attempt to cure or for palliation with regard to excruciating, intractable pain.

Cancer of the prostate with local invasion.

Cancer of the urethra, particularly in the female.

The nonmalignant conditions for which urinary diversion may well be advocated include:

Bladder extrophy.

Incontinent epispadius.

The extremely contracted bladder of interstitial cystitis or tuberculosis.

The neurogenic bladders which have resisted all other forms of correction.

Fistulas.

- Bilateral ureterovaginal.
- Intractable vesicovaginal.
- Water pot perineum.

Postirradiation stricture of the ureterovesical junction or lower ureteral stricture.

Irreparable urethral obstruction or injury.

Previous ureterosigmoidostomy with progressive renal damage.

As in all operative procedures each case is subject to individualization. However, most of these patients have accepted their new situation and have made happy adjustments.

The Technique

The technique described is essentially that employed by Bricker and later by Cordonnier. The site of the ileostomy is marked on the abdomen prior to draping the patient. Through a left paramedian incision a general examination of the ab-

domen is performed. The ureters are then identified as they cross the iliac vessels, isolated for 3 to 4 centimeters distally, severed and tagged with a black silk suture for ease of identification later. A 6 to 8 inch segment of terminal ileum is isolated. The segment is usually removed approximately 6 inches from the ileocecal valve, but this is not an absolute requirement. The blood supply is meticulously preserved both to the isolated segment and the remaining bowel. The continuity of the ileum is then restored by end-to-end anastomosis, using two layers of fine nonabsorbable sutures. The proximal end of the isolated loop is closed with a running suture of fine catgut and reinforced with nonabsorbable interrupted sutures. At this point any previously contemplated pelvic dissection is accomplished. Attention is again turned to the isolated loop and the ureters. The ureters are attached to the posterior surface of the segment near the antimesenteric border by an end to side, mucosa to mucosa anastomosis using interrupted fine absorbable sutures. The distal end of the loop is then brought out through a window in the abdominal wall and the mucosa attached flush to the skin with absorbable sutures. Care is taken to close any opening through which bowel might herniate and obstruct. A Rutzen bag is applied to the stoma before the patient leaves the operating room and gastric suction keeps the bowel decompressed.

Complications

The general cardiac and pulmonary complications attendant with all surgery are of course present in this procedure. However, the discussion is limited to those directly attributable to this operation. These may be divided into early and late manifestations depending upon their onset following surgery. The early complication that have been reported are:

Death which is directly attributable to the operation. Postoperative ileus has been greatly reduced by the introduction of gastric suction at the termination of the procedure and before the patient leaves the operating room.

Wound dehiscence has occurred even though nonabsorbable sutures are used in closure.

Temporary anuria has been reported and is usually associated with shock during the operation. Urinary sepsis (pyelonephritis) has not occurred as frequently as had been expected and every effort is made to sterilize the urine prior to operation.

Herniation of the bowel between the left ureter and the ileal conduit was reported in the infancy of the operation. The careful attention of obliterating the opening existent from the point of entrance of the ureter through the sigmoid mesentary to the anastomotic site has eliminated this hazard.

There is frequently a temporary hydronephrosis immediately following surgery which subsides shortly.

Azotemia and electrolyte imbalance do occur but careful attention to daily chemistries has minimized the danger.

The development of nonviable bowel in either the conduit or the ileum appeared so formidable initially that great care was exercised in the preservation of the blood supply, and so far has not occurred.

Intestinal obstruction is always a risk anytime that the peritoneum is violated.

Urinary leakage at the anastomotic site if draining to the outside should be given a chance to close spontaneously. Fecal fistula may also close spontaneously.

Stricture formation may occur at the skin opening or as the conduit passes through either the peritoneum or the fascial plane and may be prevented by the intermittent passage of one finger through the stoma.

The development of dermatitis surrounding the stoma can be very exasperating; it is frequently the result of a poor fitting ileostomy bag. However, rest from the ileostomy bag, application of a bland protecting ointment and heat will usually suffice.

The late complications reported are:

Stenosis of the ileal stoma which requires surgical revision.

Progressive unilateral hydronephrosis,

the cause of which may or may not be evident on pyelographic study, demands exploration and correction. Pyelonephritis, may also develop at a late date.

Incisional hernia and intestinal obstruction require surgical intervention.

The appearance of recurrent carcinoma is always a fear when dealing with malignant disease.

Progressive eversion of the ileal conduit has been reported. However, placement of retaining sutures between the loop and the peritoneum is a preventive measure.

Peristent mucus formation is a frequent occurrence, but of no serious import.

Urinary calculus has developed, as has obstruction from too long an ileal conduit.

Stenosis of the ureteroileal anastomosis is of rare occurrence.

Hematuria and stasis of urine have occurred from too long a conduit or stenosis at the stoma. Effective drainage will temporarily correct the condition.

Verrucae formation at the stoma site is usually the result of an ill-fitting bag.

Summary

A review of the history of urinary diversion is presented.

The indications for the procedure are listed. Bricker's technique for ureteroileostomy with minor changes is reviewed and the complications attendant upon the operation are discussed.

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C. E. Boyd, M. D.
Henson S. Coon, M. D.
John L. Beven, M. D.
J. Y. Garber, M. D.
R. E. C. Miller, M. D.

C. GRENES COLE, M. D., General Manager
1430 Tulane Avenue

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The Journal does not hold itself responsible for statements made by any contributor.

Editorial

Employment of Physicians by Hospitals

The problems connected with physician-hospital relationships have been slowly increasing for decades and have been of greater difficulty in the last ten years. Disputes among the parties to this relationship have many angles.

Acute concern has been manifested by organized medicine over the employment of physicians by hospitals and the bearing that such employment has upon the independence of the physician, the quality of medical care, and the fact that this tends to lead to the practice of medicine by hospitals.

In 1950, these matters were given profound study and consideration by a special committee of the AMA. The famous Hess report, which resulted, was accepted by the House in 1950. The provisions of this report were further amplified in 1951, in a resolution which has come to be known as "Guides for the Conduct of Physicians in Relationships with Institutions". These "Guides" included three principles which were suggested as the basis for adjusting controversies over relations of physicians with hospitals. These three principles are:

"1. A physician should not dispose of his professional attainments or services to any hospital, corporation or lay body by whatever name called or however organized under terms or conditions which permit the sale of the services of that physician by such agency for a fee.

"2. Where a hospital is not selling the services of a physician, the financial arrangement if any between the hospital and the physician properly may be placed on any mutually satisfactory basis. This refers to the remuneration of a physician for teaching or research or charitable services or the like. Corporations or other lay bodies properly may provide such services and employ or otherwise engage doctors for these purposes.

"3. The practice of anesthesiology, pathology, physical medicine and radiology are an integral part of the practice of medicine in the same category as the practice of surgery, internal medicine or any other designated field of medicine."

Adherence to these principles has placed organized medicine in opposition to hospital boards and hospital associations, in

many instances. As it now appears, some of the hospital boards and the American Hospital Association appear to believe that the hospital boards are both morally and legally responsible for everything done in the hospital, including the work of the medical staff and the individuals thereof. One phase of the dispute supporting the opposing points of view led to the famous lawsuit in Iowa in 1954-1955, which in substance was a suit of the Iowa Hospital Association against the Iowa State Medical Society. It was an attempt to set aside an attorney general's ruling, which designated pathology and radiology as medical services and directed the billing for these services in the name of the doctor. Essentially the points at issue were:

"1. Can corporations practice medicine through employed physicians?

"2. Is the corporate non-profit hospital to be given a preferred status under state laws?

"3. Who is to control the health care in the community—the doctors, or the hospital administrator?

"4. Is there going to be need for Blue Cross and Blue Shield, or do we just need Blue Cross?

"5. Will doctors continue to be private practitioners of medicine, or will they be professional employees of the hospital?"

On November 28, 1955, the judge gave a decision sustaining the position of the Iowa State Medical Society. This was later followed by a law, passed by the State Legislature, incorporating the essential principles involved. In due course the dispute has taken on a national aspect more sharply defined than it was at the time of the Hess report. The American Hospital Association has recently issued (August 1959) a "Statement on Hospital-Hospital Physician Specialist Relationship," which states in part:

"First and foremost, the American Hospital Association has stated and continues to support the statement that it is the right and responsibility of both hospitals and physicians to develop on the basis of local conditions and needs any terms of service which are fair to patients and which are designed to provide high quality care.

"This freedom for hospitals and physicians in the interest of patients is of fundamental importance and transcends proprietary ethical concepts and disputed legal doctrines."

There is a further assertion that "the American Hospital Association recognizes that certain diagnostic and therapeutic services are a vital part of hospital services," and that "hospitals have responsibility for charges to patients for hospital services." This is to be contrasted with paragraph 3 of the "Guides" above in which it is stated "anesthesiology, pathology, physical medicine and radiology are an integral part of the practice of medicine." It would appear that the idea behind the hospital statement is that when a service is performed in the hospital it may have both administrative and professional aspects, and the hospital should assume responsibility for the total service. From the point of view of organized medicine, the exactly opposite position could be taken. In other words, if the practice involves both professional and administrative aspects, medicine should assume complete responsibility for both aspects, because professional aspects are far more important and far reaching than the administrative aspects of the service.

The statement of the American Hospital Association was followed by a reaction of acute concern in the local and national specialty groups involved. This resulted in twelve states—among them Louisiana —putting resolutions in the House of Delegates of the American Medical Association meeting in Dallas, in December 1959, on this subject. The substance of these resolutions was to reaffirm the "Guides" of 1951, mentioned above. The purpose of reaffirming was to make it clear that no interpretation or subsequent action by any part of the American Medical Association in any way altered or weakened the strength of the principles stated. The "Guides" were reaffirmed.

If hospitals are permitted to hire direct

and sell the services of physicians in the four special areas—pathology, radiology, anesthesiology, and physiatry—the hospital will be practicing medicine. The next step will be employment of surgeons, internists, and any other groups of physicians that would serve their purpose. That this is no visionary alarm is supported by recent statement by the American Hospital Association's president, Russell A. Nelson, M. D., who is director of the Johns Hopkins Hospital, Baltimore. He stated, among other things: " * * * the hospital must bring the physician into a much more important role in the administrative operation of the hospital; the physician must recognize that the changing pattern of medical practice is centering this practice more around the hospital and away from the physician's office."

The average physician is not in immediate contact with the problems connected with the hospital practice of medicine. He does not realize that this is a creeping threat to the independence of the physician and to the stability of medical practice itself. He must become alerted to these dangers and stand with his fellow members in the profession to maintain his independence and to continue to serve what is best for medicine as a whole. To state that these difficulties are all to be resolved locally is to surrender without a fight. The individual physician is at a substantial disadvantage in dealing with an established corporate board, either local or national. The physician's independence can be saved only by the action of organized medicine.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

SALK VACCINE AVAILABLE

Following a recent conference between the President and Secretary of the Louisiana State Medical Society, and Dr. W. J. Rein, State Health Officer, and other representatives of the State Board of Health, it was decided that, in view of a definite increase in the number of polio cases for the year 1959 (138 cases through December 26th, of which 101 were paralytic as compared to a total of 74 for 1958, of which 53 were paralytic), a joint concentrated effort would be made by the medical profession of Louisiana and the State Board of Health to immunize as many individuals as possible prior to the next polio season.

In order to accomplish this, and reach the individuals that need it most, which, according to recent surveys, are in the lower socio-economic groups and in the colored, principally between the age groups of 1-5 and 20-40, the State Board of Health will furnish on request to any practicing physician in Louisiana free polio vaccine for a limited period not to exceed three months, and preferably even less time, since obviously the program is dependent on availability of funds for vaccine, which will be determined by the demand.

The vaccine may be obtained by ordering directly from:

Dr. George H. Hauser, Director
Division of Laboratories
Louisiana State Board of Health
Room 709, Louisiana State Office Building
325 Loyola Avenue
New Orleans 12, Louisiana

It is requested that, as the vaccine is reordered, you submit a brief report on the number of individuals immunized and the number of doses received by these individuals.

CONFERENCE ON AGING FEBRUARY 17-18

The New Orleans Regional Conference on Aging sponsored by the American Medical Association will be held at the Roosevelt Hotel February 17-18. Participating in the symposium, in addition to physicians, will be members of the clergy, the press, educators, nutritionists, representatives of public and private health agencies, the American Farm Bureau and others interested in the care and the problems of the aged.

An outstanding panel of guest speakers will address the meeting which is expected to attract delegates from a four-state area. The meeting is open to all physicians. The public is also encouraged to attend.

Please spread the news of this meeting among your patients and friends and inform them that the public is invited to this meeting. We feel sure they will profit by attending and their presence will most assuredly encourage the representatives of the American Medical Association and the four State Societies cooperating in the preparation of this program for their efforts in bringing to the public educational information of a subject of vital interest to each and every family in this community.

We physicians are trying, as best we know how, to find the best means of helping our aging citizens and will appreciate your assistance in solving this problem.

RATE OF STILLBIRTHS AMONG U. S. WHITES HALVED IN 26 YEARS

The stillbirth rate among whites in the U. S. was cut approximately in half between 1928 and 1954, according to a survey reported by William R. Gaffey, Ph.D., Assistant Professor of Biostatistics at the University of California School of Public Health.

In 1930 the rate was approximately 30 stillbirths per 1,000 total births, and by 1954 the rate had dropped to 15. Improvement showed in first births at the extremes of the childbearing period, the greatest decrease being evident among women in the 15-to-19 age group and among older women in the 40-to-44 age group.

The study also indicated that the higher the birth order, the smaller the improvement. Risk of stillbirth appears least in second births, regardless of the mother's age. The figures rose for third, fourth, and fifth births, indicating that the risk increases with each successive birth. Little improvement was shown in the rate for eighth births at any age.

Dr. Gaffey said that the stillbirth decrease might be attributed to a generally better standard of living. However, the more complete figures that have been reported from 48 states since 1934 have made possible a more reliable estimate.

The term "stillbirth" — until 1945 — was defined with various meanings in different states, thus adding to the difficulty of interpreting the figures reported. "Stillbirth," more properly termed "fetal death," has since 1945 been defined in national statistics to mean death at over 20 weeks' gestation or with gestation period unknown; however, the definition still varies in many states.

Stillbirths under 20 weeks are not reported by the physician in some states, and, of course, criminal abortions are not included in the figures.

THE ORPHAN OF MEDICINE

Five times as many scientific articles have been published on the hand as on the foot notwithstanding the greater difficulties to which the foot is subjected," asserts Dr. Henri L. Du Vries.

Over 60 per cent of Americans suffer from painful feet, "induced mostly by shoes having a forepart with little resemblance to the size and shape of the feet on which the shoes are worn; 80 per cent of the shoes worn are the wrong size and may create minor or major pathologic alterations in the foot."

The human foot is an ingeniously constructed organ. One of the most complex joints in the body, the metatarsophalangeal articulation, is subject to many diseases and deformities. Enlargement around this joint is a common deformity in which the cause and morbid anatomy "rarely are the same in any two cases"; yet treatment is arbitrarily selected, depending on each surgeon's preference in operative procedure.

"Major deformities of the foot, such as talipes, have received studious attention; but these disorders comprise only a fraction of the multiplicity of foot disabilities." Furthermore, in medical schools and internship the foot receives less attention than any other part of the body. "Medicine ought to adopt the orphan."

Anatomist F. W. Jones said: "Man's foot is all his own. It is unlike any other foot. It is the most distinctly human part of the whole of his anatomical make-up. It is human specialization and whether he be proud of it or not, it is his hallmark, and so long as he remains man, it is by his feet he will be known from all other members of the animal kingdom." *(Illinois M. J. 116:279, November, 1959.)*

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

SCOTT & WHITE CLINIC POSTGRADUATE CONFERENCE

The Scott and White Clinic announces its Eighth Annual Postgraduate Conference stressing **Current Topics in Medicine and Surgery**. This program, sponsored by Scott, Sherwood and Brindley Foundation and the University of Texas Postgraduate School of Medicine, will be presented in Temple on March 6, 7, 8, 1960. Registration forms can be obtained from Scott, Sherwood and Brindley Foundation, Scott and White Clinic, Temple, Texas.

Approved Credit for General Practice—20 Hours.

Registration Fee — $25.00.

The wives are cordially invited. A full round of social activities, including luncheon and dinner, are planned and are covered by the registration fee.

THE GILL MEMORIAL EYE, EAR AND THROAT HOSPITAL
Announces to the Profession
its
THIRTY-THIRD ANNUAL SPRING CONGRESS
IN
OPHTHAMOLOGY AND OTOLARYNGOLOGY
April 4 through April 9, 1960

Guest Speakers

Leonard Apt, M.D., Philadelphia, Pennsylvania.

William F. Barry, Jr., M.D., Durham, North Carolina.

Francis B. Catlin, M.D., Baltimore, Maryland.

James E. Crushore, M.D., Detroit, Michigan.

John F. Daly, M.D., New York, New York.

Edward A. Dunlap, M.D., New York, New York.

Ben S. Fine, M.D., Washington, D. C.

John R. Heller, M.D., Bethesda, Maryland.

John A. Dyer, M.D., Rochester, Minnesota.

John W. Henderson, M.D., Ann Arbor, Michigan.

William H. Kaufman, M.D., Roanoke, Virginia.

Alexander McCausland, M.D., Roanoke, Virginia.

P. Robb McDonald, M.D., Philadelphia, Pennsylvania..

Franklin B. McKechnie, M. D., Richmond, Virginia.

Alton Ochsner, M.D., New Orleans, Louisiana.

George E. Shambaugh, Jr., M.D., Chicago, Illinois.

Harvey E. Thorpe, M.D., Pittsburgh, Pennsylvania.

For Further Information Write:
Superintendent, P. O. Box 1789, Roanoke, Virginia.

LOUISIANA HEART ASSOCIATION

The Louisiana Heart Association has adopted Congestive Heart Failure as its theme for professional education in 1960, it was announced today by Dr. Homer J. Dupuy, president of Louisiana Heart Association.

Medical teams and speakers will bring the latest information about this subject to Parish Medical Societies, hospital staffs, and nursing groups.

Each year the State Heart Association, an affiliate of the American Heart Association, adopts a special emphasis for its presentations to physicians and nurses. During 1959, the theme was "Cardiac Emergencies".

This activity is under the direction of Dr. Harold P. Chastant of Lafayette, professional education chairman, and secretary of the Heart Association.

Team captains who will supervise the professional education program in their areas are:

Dr. Joe E. Holoubek, Shreveport; Dr. Cyril T. Yancey, Monroe; Dr. Elliot Roy, Mansura; Dr. David Buttross, Jr., Lake Charles; Dr. Harold Jacobs, Lafayette; Dr. Clay A. Wag-

genspack, Jr., Baton Rouge; Dr. Sanford W. Tuthill, Bogalusa; and Dr. George E. Welch, New Orleans.

Local program chairmen for medical societies and other professional groups can call upon the team captain closest to them. They can be reached during office hours or at home.

BIRTCHER WORD BOOK PUBLISHED IN SPANISH EDITION

As a service to the medical profession in Spanish speaking countries, the Birtcher Corporation has just published a Spanish edition of their famous Word Book. Originally written in English by The Birtcher Corporation's president Cecil J. Birtcher, with nearly one-half million copies having been distributed to the medical profession all over the world.

The Birtcher Word Book was originally published to provide a quick and simple way to train salesman in an understanding of medical words, so that they could do a more intelligent job in selling to the medical profession. However, as physicians, nurses and medical school professors discovered the Word Book, requests came pouring in, and as a result hundreds of thousands of copies have been supplied to the medical profession.

The Spanish edition of the Word Book was translated by Dr. Mario A. Nava of Mexico City, at the request of Mr. S. L. Bollas, Birtcher Vice President in charge of International Operations.

Copies of the Birtcher Word Book are available on request to the Birtcher Corporation, 4371 Valley Boulevard, Los Angeles 32, California U.S.A. Please specify when requesting whether you wish the Spanish or the English versions.

HEART OPERATIONS SUCCESSFUL ON RHEUMATIC FEVER PATIENTS

Young persons who have had rheumatic fever may safely undergo heart surgery, provided the disease is inactive, three Philadelphia doctors have reported.

Writing in the Sept. 19, 1959 issue of the Journal of the American Medical Association, they asked that neither a patient's age nor the fear of recurring rheumatic fever deter heart surgery.

Drs. Albert Brest, Joseph Uricchio and William Likoff of Hahnemann Medical College, Philadelphia, stressed the importance of operating when rheumatic fever is not active, and gauged the chances for a successful operation on this point.

Cardiac operations on rheumatic heart disease patients under 20 years old are rare, the doctors said, even when serious disability is present. They gave two reasons for this reluctance to operate. One is the belief that heart failure symptoms in this age group mainly arise from active rheumatic inflammation of the heart, rather than from a defective heart valve. Also, it is claimed that surgery reactivates the rheumatic fever of a person under 20.

Drs. Brest, Uricchio and Likoff questioned these concepts on the basis of their operations which showed that a mechanical obstruction may be the sole cause of a young rheumatic heart disease patient's worsened condition.

They added that failure to consider a mechanical heart defect may lead to an unnecessary prolongation of a critical disability.

The cardiac surgery which formed the basis of their study was performed between February 1951 and August 1958 on 30 patients 12 to 20 years old. The average interval since the most recent rheumatic fever attack was 8.6 years. In no case was it less than three years.

Follow-up observations lasted from four months to four years, and the patients showed no evidence of rheumatic fever activity.

ARMY NEEDS DOCTORS

Fort Chaffee, Arkansas, 3 December 1959—The Surgeon General of the United States Army has announced the need for Doctors of Medicine for assignment to U. S. Army Medical facilities thrughout the world.

Doctors who specialize in all branches of the Medical profession, with the exception of Pediatricians, Anesthesiologists, Ophthalmogists are encouraged to apply for active duty with the U. S. Army. Applicants, upon acceptance, will be called to active duty for three years or they may volunteer for indefinite tours beginning in April of 1960.

Grades of appointees will be determined by number of years of participation in professional activities. Medical school and internship will be counted both for pay and for determining initial grade of applicant.

For further details and applications, interested Doctors in Arkansas, Louisiana and Oklahoma should contact Lt. Col. W. H. Dickerson, Headquarters, Oklahoma Sector Command, XIX U. S. Army Corps (Reserve), 1101 N. Broadway, Oklahoma City, Oklahoma, Telephone: CEntral 5-4552.

FAMILY DOCTOR SCHEDULE PHILADELPHIA MEETING

The American Academy of General Practice will hold its 12th Annual Scientific Assembly, March 21-24, 1960, in Philadelphia's Convention Hall. More than 4,000 family doctors and 3,000 residents, interns, exhibitors and wives

will attend the four-day program highlighting recent progress in medicine and surgery. The Academy has more than 26,000 family doctor members and is the nation's second largest medical association.

The Philadelphia Assembly program lists 31 prominent medical educators who will discuss a variety of subjects ranging from arthritis and anemia to surgery, geriatrics and mental health. The doctors will also visit more than 100 scientific and 300 technical exhibits. Many of the scientific exhibits will relate directly to the scientific program. They have been carefully selected to answer questions posed by the doctor in active practice. All of the nation's pharmaceutical firms will be represented in the technical exhibit area.

TRANQUILIZERS HAVE "LITTLE TO OFFER" IN SKIN CONDITIONS

Tranquilizing drugs have "little to offer" in the treatment of patients with dermatological conditions, a Hayward, Calif., physician found after extensive study which required four years to complete.

Dr. Wayne Wright, who reported his findings in the Nov. 21 Journal of the American Medical Association, used nearly every type of tranquilizing drug in a study which involved a total of 740 patients, who were suffering from a wide variety of skin conditions. Many of the clinical cases were from the Travis Air Force Hospital in Fairfield, Calif.

Dr. Wright, who was assisted in his study by Drs. Jean S. Wright and Max Krause, concluded that there was only one type of dermatological condition which was helped by a tranquilizing drug. Nummular eczema, characterized by coin-shaped patches on the skin, was "definitely benefited" by one of the drugs, hydroxyzine hydrochloride.

Enough patients were helped, Dr. Wright said, to "conclude that it merits a trial in treatment of patients with this condition."

As adjunctive therapy, the tranquilizers help to relieve itching, to produce sleep, and to allow dosage of steroids and certain hormones to be reduced, the Journal article said.

The study revealed that the patients suffered many side reactions from this class of drugs whose principal effect is to calm down nervous, anxious, excited and agitated people. Minor side effects of the drugs used were blurred vision, nasal congestion, dryness of the mouth, changes in the pulse rate and constipation. The most serious side reactions were convulsions.

PROGRESS OF MEDICAL SCIENCE FORCES HIGH LABORATORY COST

How the progress of medical science forces the cost of certain laboratory procedures to reach almost unrealistic levels over which neither patient nor physician has control is seen from an article appearing in the Nov. 21 issue of the Journal of the American Medical Association.

Heart catheterization, a valuable diagnostic tool to the physician, has grown exceedingly complex and costly, especially in relation to the equipment and personnel required. This cost, however, is only the beginning. Heart catheterization is one of many procedures terminating in cardiac surgery which is carried out by a large team using a costly heart pump.

Cost analysis of heart catheterization is covered in a Journal article written by Dr. Max H. Weil, formerly chief of cardiology at the City of Hope Medical Center, Duarte, Calif., and presently assistant professor of medicine at the University of Southern California School of Medicine, Los Angeles.

FALL CLOTHES' CLEANING BAGS MUST BE DESTROYED

As clothes are brought out of storage, their covering plastic cleaning bags again become a major menace.

When the bags are removed from the clothing, they should be destroyed. They should be shredded or tied in knots and put in a tightly covered disposal can, an article recommended in the October 1959 Today's Health, published by the American Medical Association.

They should never be used as make-shift covering for pillows, blankets or mattresses in baby carriages, playpens, or cribs.

The bags with "their softness, silkiness and see-through characteristics" attract children as playthings. Children love to pull the bags over their heads, but when they do, they face possible death.

It appears, the article explained, that an electrostatic charge may be generated by friction from handling the bag. The youngster, while peering through, is apt to have the bag literally grab him through the electrical attraction to his face.

If this happens, only prompt intervention of an adult will prevent tragedy. A child can fight back at the material, but he cannot tear it. Dizziness, inability to think, and muscle spasm occur. Breathing becomes more and more rapid. Vomiting with inhalation of undigested food puts an end to this terrible situation, the article said.

It was written by Beatrice Schapper, New York.

BOOK REVIEWS

Patient Care and Special Procedures in X-ray Technology. By Carol Hocking Vennes, R.N. B.S. and John C. Watson, R.T. St. Louis, C. V. Mosby Co., pp. 203, 1959, $5.75.

This small monograph fills a definite gap in the training of x-ray technicians and student nurses. In fact, it might well be read by many members of the medical profession with a definite benefit. .The relationship of the patient's clinical condition and how he should be handled in the x-ray department can only be understood when the technician becomes aware of the problems of medical diagnosis and nursing care.

The handling of the patient in such matters as movement from place to place or taking care of the patient with splints, casts, or who are patients under sedation are all considered in the text. Administration of drugs and fluids, as well as the care of patients who are receiving infusions is also covered. The handling of the cardiac, post-operative or severely injured patient with portable x-ray procedures is also described. The proper handling of the patient in routine procedures such as upper G.I. series and administration of barium enemas is followed by further discussion on special procedures such as pneumoencephalography, arteriography, myelography, and peripheral angiography.

Special problems in operating and recovery rooms forms still another chapter. The precautions to be followed in operating suite and precautions in the use of x-ray equipment are considered. It is emphasized that there is still no completely explosion proof x-ray unit.

A work of this nature should assume a definite place in the teaching curriculum of most schools of x-ray technology and might also be of considerable benefit to those instructors in nursing who teach student nurses what their patients will expect when they go to the radiology department. The text is well written and easily understood.

CHARLES M. NICE, JR., M.D.

Hypophysectomy; Edited by O. H. Pearson, M.D., F.A.C.P., Springfield, Illinois, Charles C Thomas, 1957: pp. 154, Price $5.00.

"Hypophysectomy", edited by O. H. Pearson of Cornell University Medical College and Memorial Hospital, presents a commentary on meetings held in March of 1956 at the Sloane-Kettering Institute in New York. The results given included experiences with hypophysectomy for cancer and juvenile diabetes. Surgical hypophysectomy by Drs. Herbert Olivecrona, Bronson Ray, William Peyton, Donald Matson and others were discussed together with experiences with attempts to achieve hypophysectomy by various forms of radiation by Drs. A. P. M. Forrest, D. M. Bergenstal, Joseph Evans and J. J. Nickson. The physiological effects of these procedures are likewise fully outlined.

In essence, the surgical procedure of hypophysectomy requires a meticulous technique. The degree of difficulty and risk depends in large part on the completeness of removal of the gland. Surgically, it is difficult to be certain of removing the last remnants lying anterior to the chiasm and in recesses of the sella obscured by venous channels. Radiation hypophysectomy has proved less predictable than surgery and more likely to result in either incomplete destruction of the gland or damage to adjacent neural structures including the visual pathways and hypothalmus.

Most promising remissions have been obtained in some cases of metastatic carcinoma of the breast. Others with this condition strangely obtain no benefits even when functional hypophysectomy is complete. For them, complete functional hypophysectomy does little, either beneficial or harmful, although diabetes insipidus must be treated. A remission of approximately two years may be expected in optimum cases. This is substantially better than that obtained with oophorectomy or adrenalectomy but selecting cases that will benefit most from the procedure has proved uncertain. One test to predict benefit from hypophysectomy is remission of tumor growth by oophorectomy. Provocative tests with small doses of estrogens may be used to determine if the tumor is stimulated to growth by hormones, but stimulating tumor growth is not an unmixed blessing. Hormonal suppression of the pituitary proves possible in some cases with tumor growth retardation, but the side effects of large doses cannot be disregarded.

Hypophysectomy for juvenile diabetes appears to offer a means of arresting the vascular aspects of the disease but does not prevent retinal hemorrhage from disease already existing in these vessels. It is a substantially more hazardous procedure than hypophysectomy for cancer as the brain vessels are more fragile in the twenty to thirty year olds so far operated upon.

W. RANDOLPH PAGE, M. D.

Principles of Prevention in the Occurrence and Progression of Disease; by Herman E. Hilliboe, M.D. and Granville W. Larimore, M.D., Philadelphia, W. B. Saunders Co. Price $12.00.

Books on preventive medicine are becoming more plentiful. That is as it should be. Just as preventive medicine and public health were part of the thinking and practice of well trained physicians prior to the twentieth century, the cycle is now beginning to repeat itself in that organized medicine is again taking a greater interest in preventive medicine and public health. This interest will unavoidably become greater

as knowledge of these disciplines continues to grow and to break down the barrier between therapeutics and prevention.

The author-editors are two very competent public health physicians. They have collected materials from lectures, seminars, and articles prepared by those specialists who have, for the last several decades, worked with the New York State Department of Health in teaching preventive medicine and public health to medical practitioners, students, and to those in related fields.

The main purpose of the book is to give orientation and to serve as a text for those physicians willing to incorporate preventive medicine into their practice. The authors claim that they are approaching preventive medicine from a new point of view. This point of view classifies prevention into: (1) Prevention of occurrence of disease, and (2) prevention of progression of disease. Actually, this is not a new point of view for most public health people, but probably does represent a newer approach in teaching to medical students and in the orientation of practitioners. Besides medical topics, the book includes chapters on such sanitary subjects as waste disposal, insect vectors, air pollution, accident hazards, hygiene of housing, potable water, and defense against atomic disaster. These subjects serve as background information to impress physicians how the environment is intricately involved with the medical problems of people. The format is good, the authors continually emphasize the dynamic nature of the development of prevention in relation to therapeutics and health. The book gives an excellent picture of the physicians' place in the field of preventive medicine and public health. It would add substantially to any physician's library.

BEN FREEDMAN, M. D.

So You Have Glaucoma; by Everett R. Veirs, M. D., New York, N. Y., Grune & Stratton, 1958, pp. 64, Price $2.75.

This concisely and conservatively written booklet is primarily for patients who have actual or potential glaucoma. Its value to our readers is primarily for referral use to glaucoma patients. This abstract will therefore largely be an amplification of its contents.

Section I deals with the definition and historic background of glaucomas. Section II, with the frequency of glaucomas; infants, juveniles, middle aged and elderly, including the influences of sex and heredity. Section III, with ocular anatomy including the cornea, sclera, uveal tract, lens, retina, optic nerves, and tear system. Section IV, with ocular physiology, including aqueous humor formation and escape, as well as the influence of ocular pressure. Section V deals with types and causes of glaucomas: (a) Primary: chronic simple, acute congestive, congenital and juvenile; (b) Secondary: traumatic, inflammatory, and following tumors and cataracts. Section VI, with signs and symptoms of glaucomas: Pain, visual loss, halos, redness, corneal clouding, enlargement of pupil and eyeball, intra-ocular pressure, and optic nerve changes. Section VII, with the diagnosis of glaucomas including: (a) family and personal history; (b) tonomotry, tonography, genioscopy, and ophthalmoscopy; (c) visual field determination; (d) provocative tests, including water drinking, dark room and pupillary dialation. Section VIII deals with the medical and surgical treatment of glaucomas: (a) Primary-acute (closed angle); (b) Secondary - acute, chronic (open angle).

CHAS. A. BAHN, M. D.

Correlative Neuroanatomy and Functional Neurology; by Joseph G. Chusid, M. D. and Joseph J. McDonald, M.S., Sc.D., M.D.; 9th ed., 1958. Los Altos, Calif. Lange Medical Publications. Pp. 345, Price $4.50.

The present volume is the latest revision of a work first published in 1938. It is paper covered but is durably bound and will stand up well under hard usage. The price is exceedingly reasonable considering the size and content of the volume.

The scope of this book is wide; it is composed of sections entitled: Central Nervous System, with 4 chapters and 58 pages; Peripheral Nerves, with 7 chapters and 106 pages, and Principles of Neurodiagnosis with 24 chapters and 148 pages. In addition, the book includes an extensive appendix of useful information covering a variety of subjects in the field of applied neurology. The coverage of the sections appears to be adequate and in proportion, with slightly more than half of the material devoted to the third section.

The volume is copiously illustrated with clear, instructive drawings liberally provided with labels. Other figures have been borrowed from selected publications; the reproduction in some of these borrowed figures is not entirely adequate.

The treatment of materials is consistent throughout and might be described as being of the "thumbnail sketch" type, wherein only the basic information on each subject is presented. On the whole, there is an adequate selection of facts together with their analysis.

Perhaps the only justifiable criticism stems from the opening sentence in the preface, which begins, "This volume is intended for the beginner in neurology . . . " It is the opinion of this reviewer that the book could better serve almost any other type of interested person. Its compact *precis* mode of presentation is ideal for anyone who wishes to review the subject or who has forgotten some special point. It is hardly adequate for readers who lack special background informa-

tion. The same quotation continues, " . . . and will serve him best if used as an aid or supplement to standard neurological texts and literature." This portion of the statement is of greatest importance to the reader since the volume is deficient in the field of relationship between facts and, by virtue of its organization plan, must remain so.

RALPH N. BAILLIF, PH.D.

The Diagnosis and Treatment of Infections; by D. Geraint James, M.A., M.D. (Cantab.), M.R.-C.P. (London), Springfield, Illinois: Charles C Thomas, 1957. Pp. 234, Price, 30 s.

This short work can be warmly recommended to the student or physician working with infectious diseases, as a ready source for the information concerning diagnosis and treatment that he requires. The author presents concisely the essentials of this important field and emphasizes the practical considerations which can easily be missed in a bulky textbook of microbiology. The book is divided into three parts: in the first, the uses of the chemotherapeutic drugs and antibiotics and the complications that they produce are presented; then the pathogenic micro-organisms are discussed; finally, the selective affinity of infections and organ systems is described. The result is a well organized manual from which necessary information concerning infectious diseases can be quickly obtained.

MORTON M. ZISKIND, M. D.

Applied Medical Library Practice; by James E. Keys, A.B., M.A., with Chapters by Catherine Kennedy, B.S., L.S.; Ruth M. Tews, B.S., L.S., Springfield, Ill., Charles C Thomas, Publisher, 1958, pp. 495. Price $10.00.

Authored by the Librarian of the Mayo Clinic, with the assistance of his staff, this book will prove useful to librarians and physicians alike, supplementing the material published in this field within recent years.

Of interest chiefly to the medical librarian are the chapters discussing administration, acquisitions, cataloging and classification, the medical indexes, abstract journals, medical bibliography, and the administration and organization of the patients' library. Containing useful information for both librarian and physician are such chapters as those covering the arrangement and preservation of reprints; the growth of medical publishing from the first printed book through the eighteenth century; important American medical publications and authors of the nineteenth century; the development of the private medical libraries of physicians such as Osler, Cushing, Holmes, Fulton, Trent and others; and the survey of medical publishing in the United States during the nineteenth and twentieth centuries. Consideration of the place of the medical library in graduate medical education, research libraries in medicine, and the changing concepts in library services, provide insight into the meaning of medical librarianship, especially helpful to the physician serving on a library committee.

Among the unique features of the book are: the appendices listing the publishers of medical and related books in the United States, medical book dealers in the United States handling new books, the antiquarian booksellers in the United States dealing in medical and related subjects, each list arranged by city, and the bibliography of medical works in facsimile as well as the chapter on the representative medical libraries of the United States.

A reference tool which most librarians will find advantageous to have in their collections.

ELIZABETH D. MARSH, B.S., B.S.L.S.

Ophthalmic Plastic Surgery; by Sidney A. Fox, M.S. (Ophth.) M. D., New York, N. Y., Grune and Stratton, Second Revised Edition, 1958, pp. 324, Price $15.00.

This concise text was written for the ophthalmic surgeon. It presents an integrated system of ophthalmic plastic surgery by an authoritative source. Comments on anatomy and surgical technique are terse and restricted to the field. Repairs of various lesions are considered in anatomical sequence. For each situation the simplest procedure resulting in the least complications has been described and diagrammed. When numerous procedures are appropriate, the author's preference is explained, though other procedures are descibed.

Constant attention to principles underlying successful ophthalmic surgery as determined by the author's experience, numerous lucid diagrams, and an integrated approach to the choice of procedures make this a text of great practical value. It is not intended as a comprehensive reference work. The description of several new procedures, minor text changes and the edition of numerous lucid diagrams differentiate this from the preceding edition.

JAMES MCCOMISKEY, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, N. Y.: Acute Pericarditis, by David H. Spodick. M.D.

W. B. Saunders Co., Phila.: Christopher's Minor Surgery, by Alton Ochsner, M.D., and Michael E. DeBakey, M.D. (8th edit.).

Charles C Thomas, Publisher, Springfield, Ill.: Metabolic Aspects of Renal Function, by William D. Lotspeich, M.D.

Vanderbilt University Press, Nashville: The Clonal Selection Theory of Acquired Immunity, by Sir Macfarlane Burnett.

Vantage Press, N. Y.: A Doctor's Life of John Keats, by Walter A. Wells, M.D.



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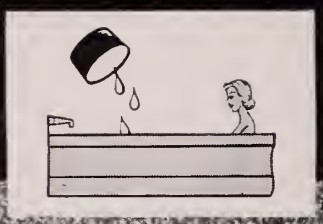
G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

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*Brown, S. S.; Libo, H. W., and Nussboum, A. H.: Norethondrolone in the Successful Monagement of Anorexio and "Weight Log" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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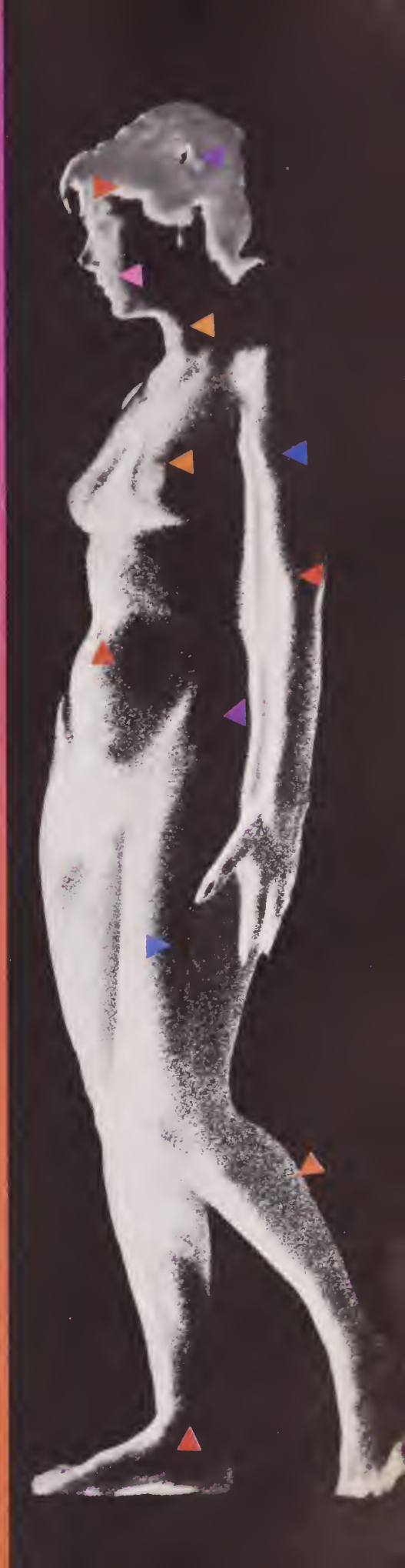
IN

simple headache
rheumatic conditions
arthralgias
myalgias
common cold
toothache
earache
dysmenorrhea
neuralgia
minor trauma
tension headache
premenstrual tension
minor surgery
post-partum pain
trauma
organic disease
neoplasm
muscle spasm
colic
migraine
musculo-skeletal pains
postdental surgery
post-partum involution
fractures
synovitis/bursitis

relief of pain of all degrees of severity up to that which requires morphine

AND IN

fevers
dry, unproductive coughs



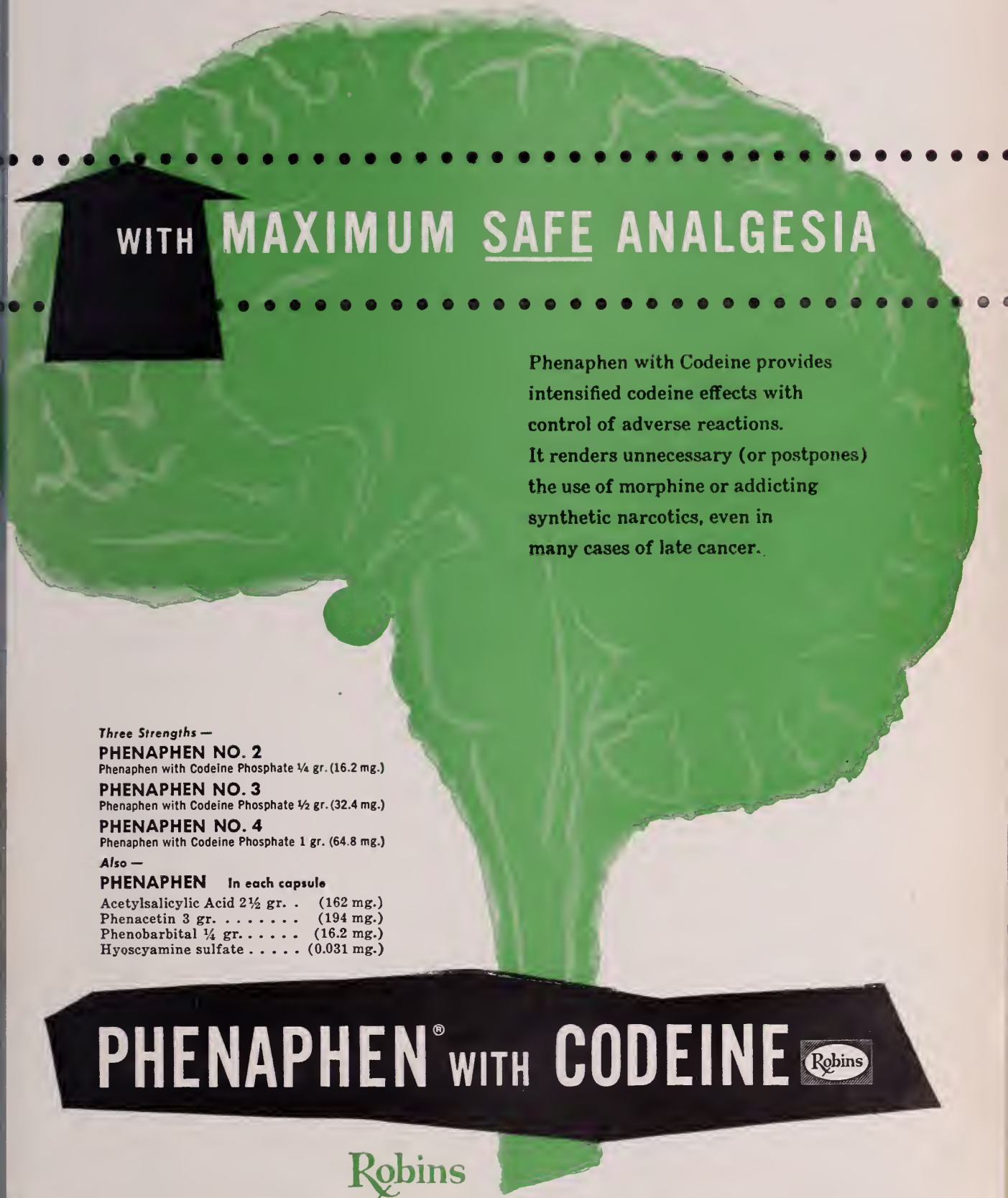
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Each VARIDASE Buccal Tablet contains: 10,000 Units Streptokinase and 2,500 Units Streptodornase.

Supplied: boxes of 24 and 100 tablets.

1. Innerfield, I.: Clinical report cited with permission
2. Clinical report cited with permission

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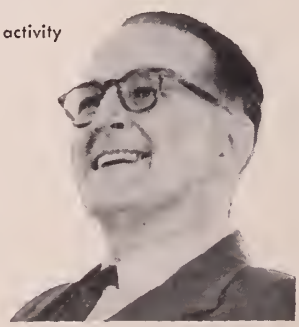
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no irritating crystals[1] · uniform concentration in each drop[2]

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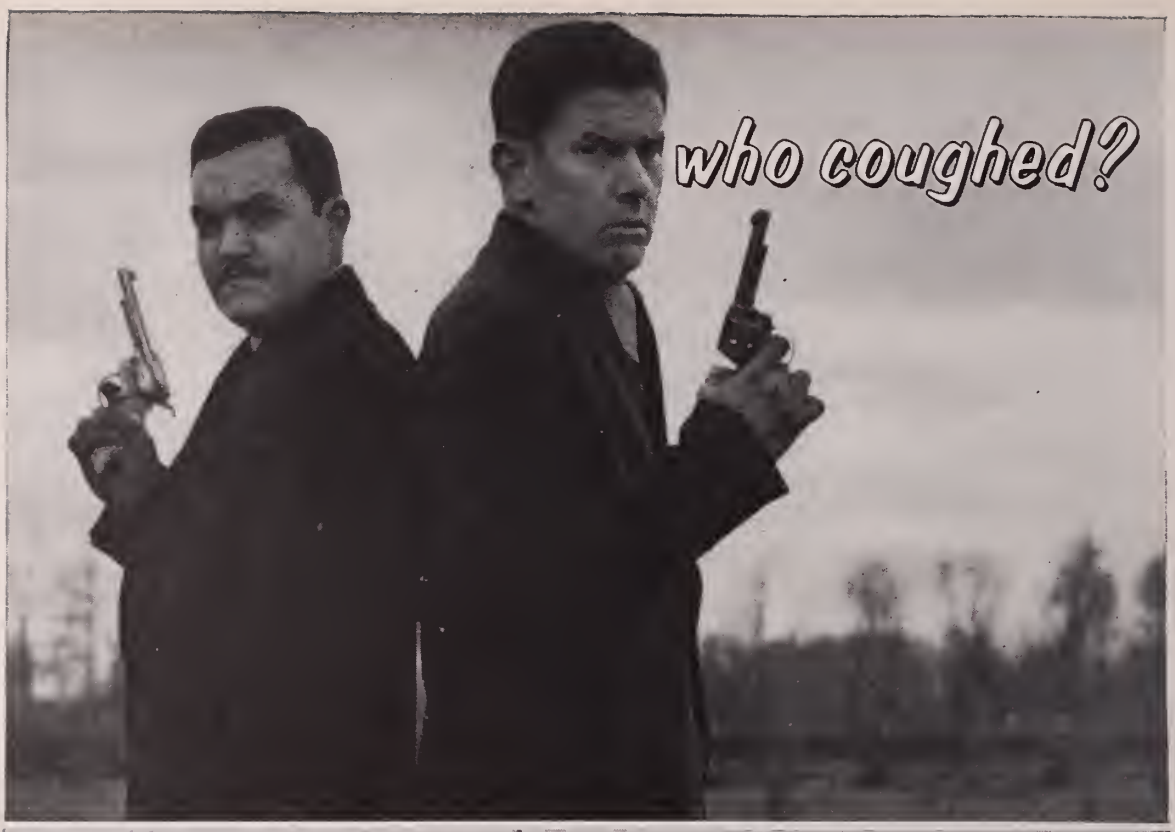
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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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- relieves cough and associated symptoms in 15-20 minutes • effective for 6 hours or longer
- promotes expectoration • rarely constipates
- agreeably cherry-flavored

NOW MORE EFFECTIVE THAN EVER WITH THE NASAL DECONGESTANT PHENYLEPHRINE

Each teaspoonful (5 cc.) of HYCOMINE* contains:

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Dihydrocodeinone Bitartrate (Warning: May be habit-forming)	5 mg.	6.5 mg.
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Recommended dosage: first-day dose is 1 teaspoonful (250 mg.) for each 20 lbs. body weight up to 80 lbs. For each day thereafter, ½ teaspoonful for each 20 lbs. For 80 lbs. and over, use adult dosage of 4 teaspoonfuls (1.0 Gm.) initially, and 2 teaspoonfuls (0.5 Gm.) daily thereafter. Administer immediately after a meal.

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B-vitamins or ascorbic acid

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Each of these food portions contains a saturation dose of one of the water-soluble B vitamins or C. The easy way to provide such quantities of these vitamins with speed, safety and economy is to prescribe Allbee with C. Recommended in pregnancy, deficiency states, digestive dysfunction and convalescence.

In each Allbee with C:		As much as:*
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Calcium pantothenate	10 mg.	¼ lb. of fried beef liver
Ascorbic acid (Vitamin C)	**250 mg.**	¾ lb. of cooked broccoli

*These common foods are among the richest sources of B vitamins and ascorbic acid. H. A. Wooster, Jr., Nutritional Data, 2nd Ed., Pittsburgh, 1954.

Allbee® with C

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they help the cough remove its cause

These elegant antitussives comprise a group of significantly superior expectorants from which you may select the formula best suited for your coughing patient.

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In addition, the Robins antitussive armamentarium provides a choice of widely accepted drugs in various combinations with glyceryl guaiacolate for treating different kinds of coughs and associated symptoms. For antihistaminic effects, there is Dimetane® or prophenpyridamine; for bronchodilation and nasal decongestion, there are sympathomimetic agents; and for suppression of the "too frequent" cough, there is codeine or dihydrocodeinone.

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Each teaspoonful contains:

Glyceryl guaiacolate ..... 100 mg.

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Codeine phosphate ..... 10 mg.
(exempt narcotic)

Dimetane® Expectorant

Each teaspoonful contains:

Parabromdylamine maleate (DIMETANE) ..... 2 mg.
Glyceryl guaiacolate ..... 100 mg.
Phenylephrine HCl, USP ..... 5 mg.
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Dimetane® Expectorant-DC

Each teaspoonful contains the Dimetane Expectorant formula *plus* Dihydrocodeinone bitartrate, NF ..... 1.8 mg.
(exempt narcotic)

References: 1. Cass, L. J., and Frederik, W. S.: Am. Pract. & Digest Treat. *2*:844, 1951. 2. Blanchard, K., and Ford, R. A.: Journal-Lancet *74*:443, 1954. 3. Hayes, E. W., and Jacobs, L. S.: Dis. Chest *30*:441, 1956. 4. Blanchard, K., and Ford, R. A.: Rocky Mountain M. J., Vol. 52, No. 3, 1955. 5. Boyd, E. M., and Pearson: Am. J. M. Sc. *211*:602, 1946.

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A major independent research foundation, under Lorillard sponsorship, determined that the average puff of cigarette smoke contains over 12 billion semi-solid particles. Further research revealed that inhaled smoke from ordinary cigarettes has a predominant proportion of particles, from 0.1 to 1 micron in diameter, averaging 0.6 micron.

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from LOW BACK PAIN
and DYSMENORRHEA
THE FIRST TRUE "TRANQUILAXANT"
Trancopal

Here is what you can expect when you prescribe

for dysmenorrhea

and premenstrual tension

Case Profile*

A 28-year-old married woman, a secretary in a booking agency, complained of severe and consistent pain and cramps in the abdomen during her menstrual periods. Psychologically, she described the first two days as "climbing the walls." Menarche occurred at age 13. She has a regular twenty-eight day menstrual cycle and a four day menstrual period.

Trancopal was given in a dose of 100 mg. four times a day for the first two days of the four day period. In addition to the relief of the dysmenorrhea she also noticed disappearance of a "bloated feeling" that had previously annoyed her. She has now been treated with Trancopal for one and one-half years with excellent results. Other medication, such as codeine or aspirin with codeine, had relieved the pain, but the patient had had to stay home. Because her father is a physician, many commercial preparations had been tried prior to Trancopal, but no success had been achieved.

Before taking Trancopal this patient missed one day of work every month. For the past year and a half she has not missed a day because of dysmenorrhea.



THE FIRST TRUE "TRANQUILAXANT"

Trancopal®

for low back pain



Case Profile*

A 42-year-old truck driver and mover injured his back while moving a piano. The pain radiated from the sacral region down to the region of the Achilles tendon on the right side. X-rays for ruptured disc revealed nothing pertinent. The day of the injury he was given Trancopal immediately after the physical examination. Although 100 to 200 mg. three times a day were prescribed, the patient on his own responsibility increased the dosage of Trancopal to 400 mg. three times a day. This dosage was continued for three days and then gradually reduced over a ten day period. During this time, the patient continued to drive his truck. The muscle spasm was completely controlled and no apparent side effects were noted.

For the past six months, the patient has continued to take Trancopal 100 to 200 mg. as needed for muscle spasm, particularly during strenuous days.

**Clinical Reports on file at the Department of Medical Research, Winthrop Laboratories.*

Turn page for complete listings of Indications and Dosage.

THE FIRST TRUE "TRANQUILAXANT"

Trancopal

potent MUSCLE RELAXANT

effective TRANQUILIZER

- In musculoskeletal disorders, effective in 91 per cent of patients.[1]
- In anxiety and tension states, effective in 89 per cent of patients.[1]
- Low incidence of side effects (2.3 per cent of patients). Blood pressure, pulse rate, respiration and digestive processes are unaffected by therapeutic dosage. It does not affect the hematopoietic system or liver and kidney function.
- No gastric irritation. Can be taken before meals.
- No clouding of consciousness, no euphoria or depression.

Indications [1-6]

Musculoskeletal:

Low back pain (lumbago, etc.)
Neck pain (torticollis)
Bursitis
Rheumatoid arthritis
Osteoarthritis
Disc syndrome
Fibrositis
Ankle sprain, tennis elbow
Myositis
Postoperative muscle spasm

Psychogenic:

Anxiety and tension states
Dysmenorrhea
Premenstrual tension
Asthma
Angina pectoris
Alcoholism

Now available in two strengths:



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NEW STRENGTH



Trancopal Caplets,
200 mg. (green colored, scored), bottles of 100.

Dosage: Adults, 100 or 200 mg. orally three or four times daily. Relief of symptoms occurs in from fifteen to thirty minutes and lasts from four to six hours.

Winthrop LABORATORIES
New York 18, N. Y.

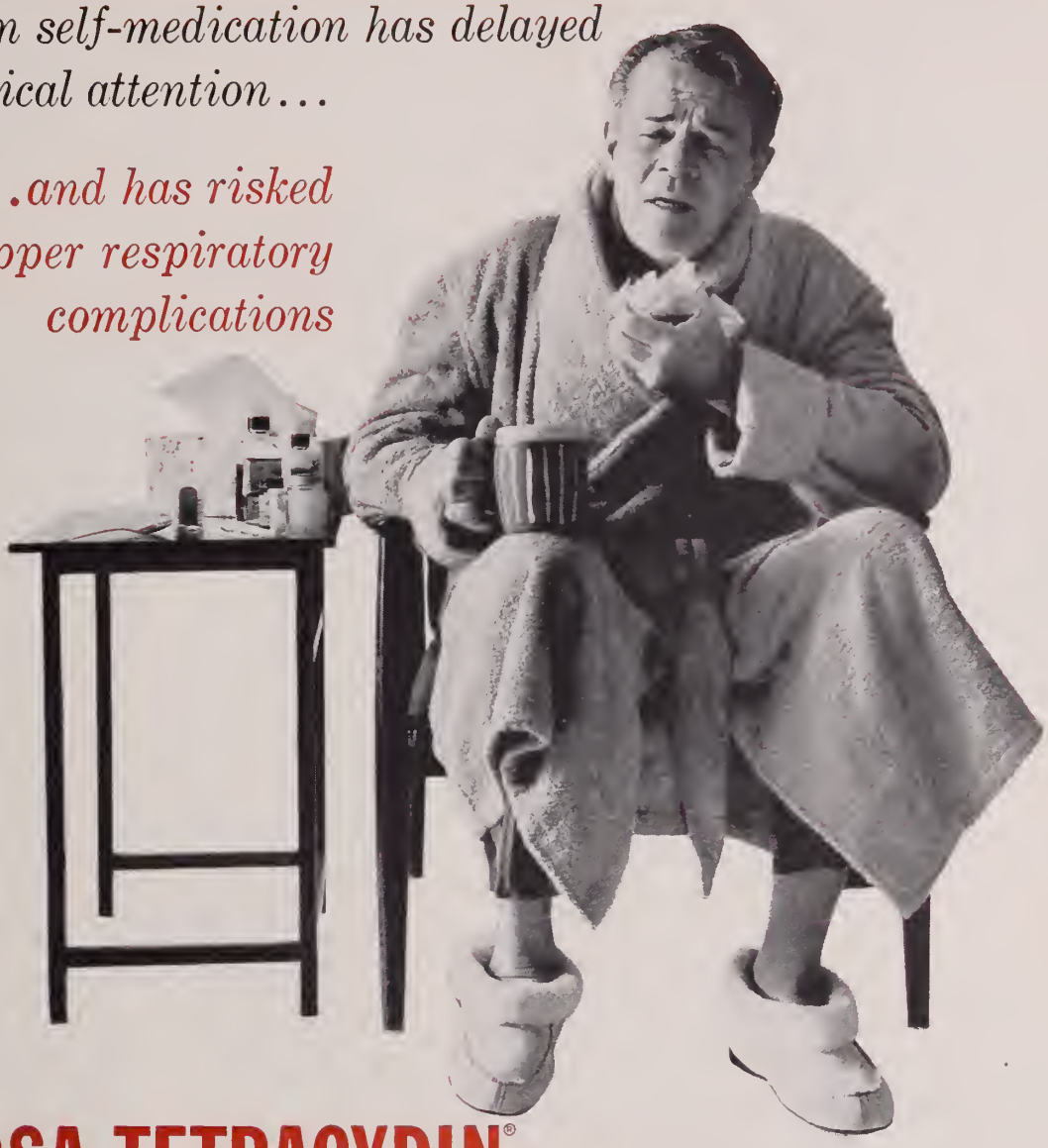
References: 1. Collective Study, Department of Medical Research, Winthrop Laboratories. 2. Lichtman, A. L.: New developments in muscle relaxant therapy, *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 3. Lichtman, A. L.: Relief of muscle spasm with a new central muscle relaxant, chlormezanone (Trancopal), Scientific Exhibit, Meeting of the International College of Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 4. Ganz, S. E.: Clinical evaluation of a new muscle relaxant (chlormethazanone), *J. Indiana M. A.* 52:1134, July, 1959. 5. Mullin, W. G., and Epifano, Leonard: Chlormezanone, a tranquilizing agent with potent skeletal muscle relaxant properties, *Am. Pract. Digest Treat.* 10:1743, Oct., 1959. 6. Shanaphy, J. F.: Chlormezanone (Trancopal) in the treatment of dysmenorrhea: a preliminary report, *Current Therap. Res.* 1:59, Oct., 1959.

Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U.S. Pat. Off. 1408M Printed in U.S.A.



in the **"COMMON COLD"**
when self-medication has delayed medical attention...

...and has risked upper respiratory complications



COSA-TETRACYDIN® CAPSULES

Cosa-Tetracyn® — analgesic — antihistamine compound

act quickly to

- *control secondary infection*
- *alleviate cold symptoms*

each capsule contains:

Cosa-Tetracyn	125 mg.
phenacetin	120 mg.
caffeine	30 mg.
salicylamide	150 mg.
buclizine HCl	15 mg.

average adult dose: 2 capsules q. i. d.

Pfizer *Science for the world's well-being*

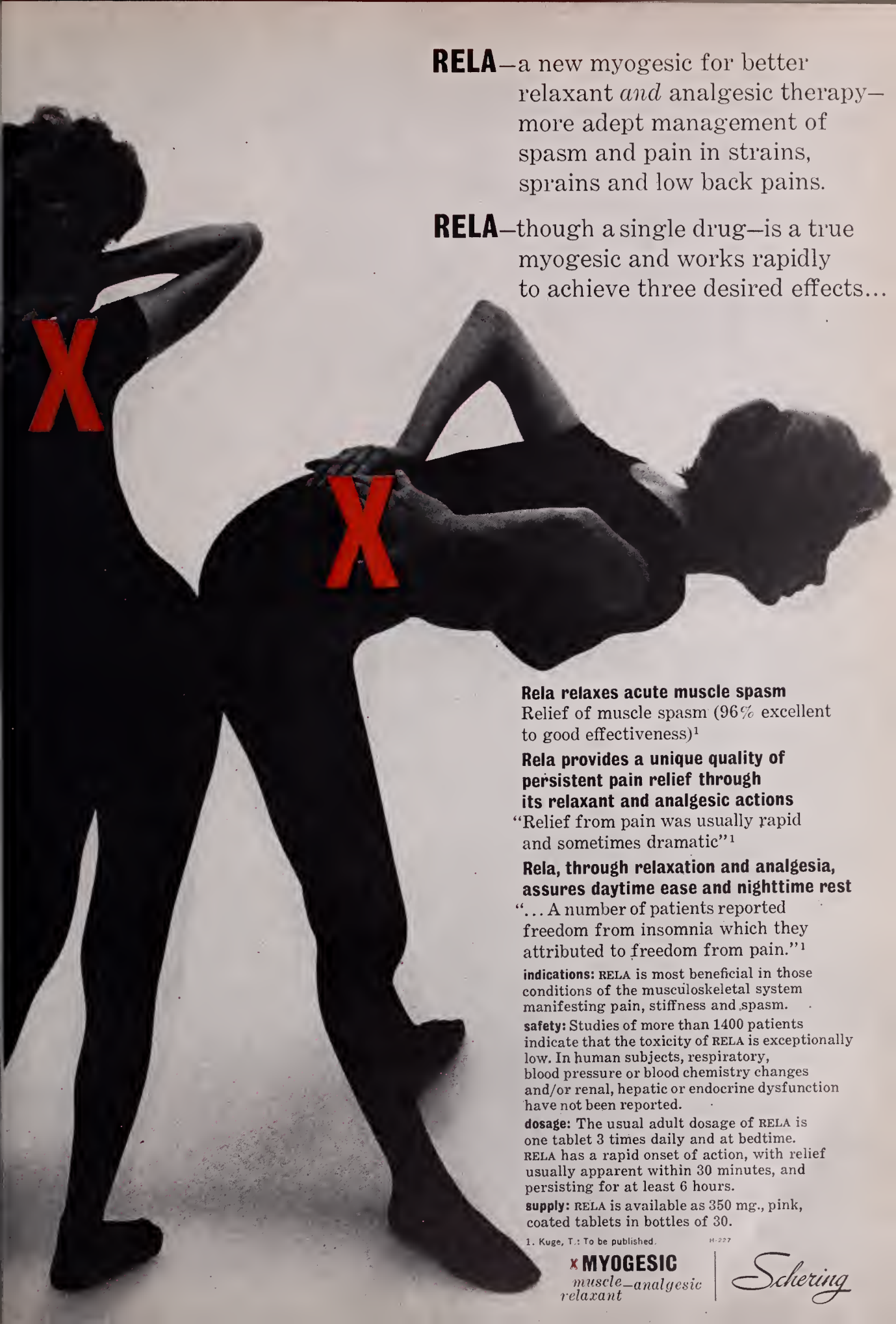
PFIZER LABORATORIES, *Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N.Y.*

ANNOUNCING SCHERING'S NEW MYOGESIC[X]



RELA™ EASES STRAINS SPRAINS & LOW BACK PAINS...! X

CARISOPRODOL



RELA—a new myogesic for better relaxant *and* analgesic therapy—more adept management of spasm and pain in strains, sprains and low back pains.

RELA—though a single drug—is a true myogesic and works rapidly to achieve three desired effects...

Rela relaxes acute muscle spasm
Relief of muscle spasm (96% excellent to good effectiveness)[1]

Rela provides a unique quality of persistent pain relief through its relaxant and analgesic actions
"Relief from pain was usually rapid and sometimes dramatic"[1]

Rela, through relaxation and analgesia, assures daytime ease and nighttime rest
"... A number of patients reported freedom from insomnia which they attributed to freedom from pain."[1]

indications: RELA is most beneficial in those conditions of the musculoskeletal system manifesting pain, stiffness and spasm.

safety: Studies of more than 1400 patients indicate that the toxicity of RELA is exceptionally low. In human subjects, respiratory, blood pressure or blood chemistry changes and/or renal, hepatic or endocrine dysfunction have not been reported.

dosage: The usual adult dosage of RELA is one tablet 3 times daily and at bedtime. RELA has a rapid onset of action, with relief usually apparent within 30 minutes, and persisting for at least 6 hours.

supply: RELA is available as 350 mg., pink, coated tablets in bottles of 30.

1. Kuge, T.: To be published.

H-227

MYOGESIC
muscle—analgesic relaxant

Schering



Shredded Cabbage



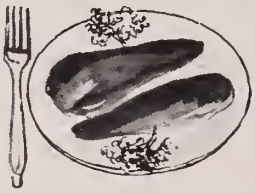
Cottage Cheese



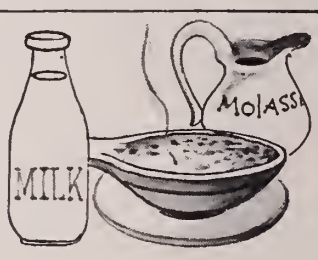
Watercress



Oysters



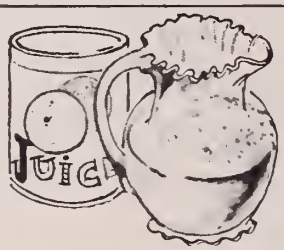
Beef Liver



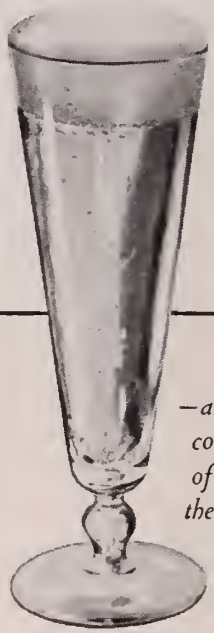
Oatmeal



Custard



Orange Juice



Foods to give your patient good nutrition naturally—and tastefully, too!

—and, with your consent, a glass of beer to make them even better

The High-Vitamin, High-Mineral Diet

Shredded new cabbage and carrot slaw goes nicely with any meal, combining vitamins A, C, and calcium. Dried apricots and figs stuffed with cottage cheese and peanuts on watercress provide calcium, iron, vitamins A, B_2, niacin and C. Oysters are rich in iron, calcium and carry vitamins A and D, too.

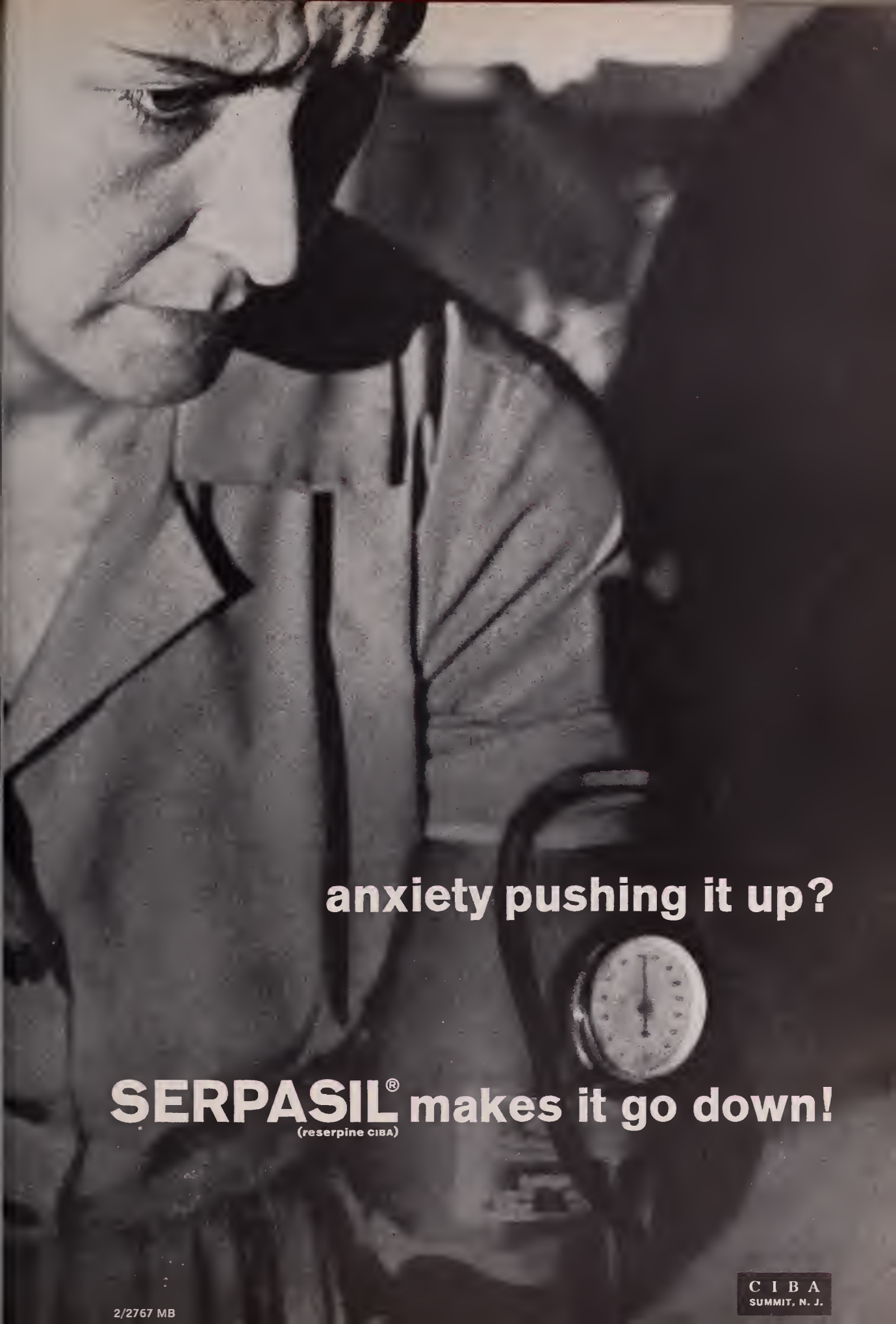
Beef liver ranks high in iron, vitamins A and B-complex. Oatmeal, rich in iron, gets a calcium and vitamin B_6 bonus when served with molasses and milk. Custard contains calcium and vitamins A, B_1, B_2. A topping of orange juice concentrate adds Vitamin C.

And with a glass of beer*—at your discretion—your patient will find his diet interesting and ample without straying from your instructions.

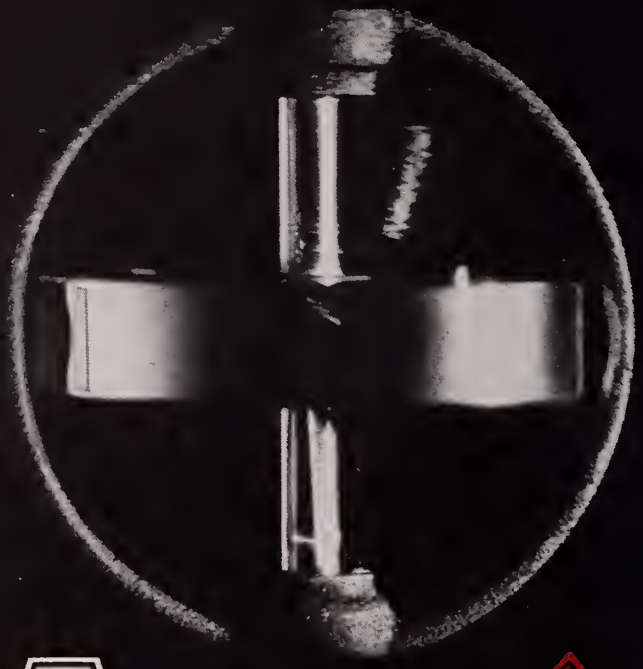
*An 8-oz. glass of beer contains 10 mg. calcium, 50 mg. phosphorus, ¼ minimum daily requirement of niacin, and smaller amounts of other B-complex vitamins. (Average of American beers)

United States Brewers Foundation
Beer—America's Beverage of Moderation

If you'd like reprints of this and 11 other dietary suggestions, please write United States Brewers Foundation, 535 Fifth Avenue, New York 17, N. Y.


anxiety pushing it up?
SERPASIL® makes it go down!
(reserpine CIBA)
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SUMMIT, N. J.

minimal disturbance
of the patient's chemical and psychic balance . . .



still unsurpassed for total corticosteroid benefits

Aris

Substantiated by published reports of leading clinicians:

- **effective control** of allergic and inflammatory symptoms[1-20]
- **minimal disturbance** of the patient's chemical and psychic balance[1, 4, 5, 8-19]

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Triamcinolone LEDERLE

anti-inflammatory and antiallergic levels ARISTOCORT means:

- freedom from salt and water retention
- virtual freedom from potassium depletion
- negligible calcium depletion
- euphoria and depression rare
- no voracious appetite—no excessive weight gain
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- low incidence of osteoporosis with compression fracture

'cations: rheumatoid arthritis; arthritis; respiratory allergies; allergic and inflammatory natoses; disseminated lupus erythematosus; nephrotic syndrome; lymphomas and leukemias.
cautions: With ARISTOCORT all traditional precautions to corticosteroid therapy should be ob- ed. Dosage should always be carefully adjusted to the smallest amount which will suppress ptoms. After patients have been on steroids for prolonged periods, discontinuance must be ied out gradually.
plied: Scored tablets of 1 mg. (yellow); 2 mg. (pink); 4 mg. (white); 16 mg. (white).
cetate Parenteral (for intra-articular and intrasynovial injection). Vials of 5 cc. (25 mg./cc.).

References: 1. Feinberg, S.M., Feinberg, A.R., and Fisherman, E.W.: *J.A.M.A.* 167:58 (May 3) 1958. 2. Epstein, J.I. and Sherwood, H.: *Connecticut Med.* 22:822 (Dec.) 1958. 3. Friedlaender, S. and Friedlaender, A.S.: *Antibiotic Med. & Clin. Ther.* 5:315 (May) 1958. 4. Segal, M.S. and Duvenci, J.: *Bull. Tufts North East M. Center* 4:71 (April-June) 1958. 5. Segal, M.S.: Report to the A.M.A. Council on Drugs, *J.A.M.A.* 169:1063 (March 7) 1958. 6. Sherwood, H. and Cooke, R.A.: *J. Allergy* 28:97 (Mar.) 1958. 7. Duke, C.J. and Oviedo, R.: *Antibiotic Med. & Clin. Ther.* 5:710 (Dec.) 1958. 8. McGavack, T.H.: *Clin. Med.* (June) 1958. 9. Freyberg, R.H.; Berntsen, C.A., and Hellman, L.: *Arthritis and Rheumatism* 1:215 (June) 1958. 10. Hartung, E.F.: *J.A.M.A.* 167:973 (June 21) 1958. 11. Hartung, E.F.: *J. Florida Acad. Gen. Pract.* 8:18, 1958. 12. Zuckner, J.; Ramsey, R.H.; Caciolo, C., and Gantner, G.E.: *Ann. Rheum. Dis.* 17:398 (Dec.) 1958. 13. Appel, B.; Tye, M.J., and Leibsohn, E.: *Antibiotic Med. & Clin. Ther.* 5:716 (Dec.) 1958. 14. Kalz, F.: *Canad. M.A.J.* 79:400 (Sept.) 1958. 15. Mullins, J.F., and Wilson, C.J.: *Texas State J. Med.* 54:648 (Sept.) 1958. 16. Shelley, W.B.; Harun, J.S., and Pillsbury, D.M.: *J.A.M.A.* 167:959 (June 21) 1958. 17. DuBois, E.F.: *J.A.M.A.* 167:1590 (July 26) 1958. 18. McGavack, T.H.; Kao, K.T.; Leake, D.A.; Bauer, H.G., and Berger, H.E.: *Am. J. Med. Sc.* 236:720 (Dec.) 1958. 19. Council on Drugs: *J.A.M.A.* 169:257 (Jan. 17) 1959. 20. Rein, C.R.; Fleischmajer, R., and Rosenthal, A.R.: *J.A.M.A.* 165:1821 (Dec. 7) 1957.

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IN MANY CASES: ENDS THE NEED FOR PAINFUL PENICILLIN INJECTIONS

COMPOCILLIN®-VK
(POTASSIUM PENICILLIN V, ABBOTT)
OFFERS THE HIGH BLOOD LEVELS OF POTASSIUM PENICILLIN V



Available in tiny, easy-to-swallow Filmtabs® and in tasty, cherry-flavored Oral Solution.

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®FILMTAB—FILM-SEALED TABLETS, ABBOTT.

"But, Doctor, I just can't swallow a lot of tablets"

"Little mother, just

ONE

BONADOXIN®

tablet stops morning sickness (you take it at bedtime)"



The formula tells why BONADOXIN quickly stops nausea and vomiting of pregnancy in 9 out of 10 cases.* Each tiny BONADOXIN tablet contains:
Meclizine HCl (25 mg.) for antinauseant action / Pyridoxine HCl (50 mg.) for metabolic replacement

More than 60,000,000 tablets prescribed and taken. Toxicity low, tolerance excellent. In bottles of 25 and 100. Usual dose: one tablet at bedtime; severe cases may require another on arising. See PDR, p. 779.

BONADOXIN also effectively relieves nausea and vomiting associated with: anesthesia, radiation sickness, Meniere's syndrome, labyrinthitis, cerebral arteriosclerosis and motion sickness.

After Baby Comes

For infant colic, try antispasmodic BONADOXIN Drops... stop colic in 7 out of 8 cases.*

Each cc. contains:
Meclizine 8.33 mg. / Pyridoxine 16.67 mg.

See PDR, p. 779.

*Bibliography available on request.

New York 17, New York • Division, Chas. Pfizer & Co., Inc. • Science for the World's Well-Being



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CLINICAL BRIEFS FOR MODERN PRACTICE

WHY IS DIABETES IN INFANTS SO DIFFICULT TO DIAGNOSE?

Because of the infrequency of the disease in this age group, its sudden onset, the profusion of inconsistent presenting symptoms, and because the accompanying symptoms of anorexia and vomiting are also characteristic symptoms of many other ills of infancy.

Source: Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.: Diabetes *8*:289, 1959.

for those pediatric puzzlers..."A routine urinalysis and blood sugar should be done whenever the possibility of diagnosing diabetes is entertained."*

DIABETES MELLITUS AT AGES 1 TO 5

Order of Frequency of Presenting Symptoms in 110 Patients

Symptoms	No. of Patients	Per cent of total group
Polyuria	93	84.5
Polydipsia	89	81.0
Weight loss	47	42.7
Polyphagia	28	25.4
Anorexia	16	14.5
Lethargy	14	12.7
Enuresis	7	6.4
Vomiting	5	4.5
Irritability	3	2.7
"Craving for sweets"	3	2.7
"Sticky diaper"	3	2.7
"Strong odor to urine"	2	1.8
Glycosuria	2	1.8
Hypoglycemia	2	1.8
Personality change	1	0.9
Boils	1	0.9
Headache	1	0.9
Abdominal cramps	1	0.9

Adapted from Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.*

the standardized urine-sugar test for reliable quantitative estimations

AMES COMPANY, INC. Elkhart, Indiana Toronto, Canada

COLOR-CALIBRATED CLINITEST®

BRAND Reagent Tablets

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- **full-color calibration, clear-cut color changes**
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- **standard blue-to-orange spectrum**
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- **"urine-sugar profile" graph for closer control**

WHEN BLOOD PRESSURE MUST COME DOWN...



When hypertensive symptoms such as dizziness, headache and fainting are frequent enough and severe enough to interfere with your patient's activity and safety—then it is time to consider the beneficial actions of Serpasil-Apresoline. Both Serpasil and Apresoline lower blood pressure. When the Serpasil-Apresoline combination tablet is prescribed, blood pressure response is even better. In addition, Serpasil contributes favorable calming and heart-slowing effects. Apresoline increases renal blood flow, decreases cerebral vascular resistance and inhibits the actions of humoral pressor agents. Combined with Serpasil, Apresoline is effective at a lower dosage, thus side effects are rarely a serious problem.

SUPPLIED: *Tablets* #2 (standard-strength), each containing 0.2 mg. of Serpasil and 50 mg. of Apresoline. *Tablets* #1 (half-strength), each containing 0.1 mg. of Serpasil and 25 mg. of Apresoline. *Samples available on request.*

Serpasil®-Apresoline®

hydrochloride

(reserpine and hydralazine hydrochloride CIBA)

CIBA SUMMIT, NEW JERSEY

This is Panalba performance...





in sinusitis

. . . into a mixed culture of the four organisms commonly involved in sinusitis . . . *Str. hemolyticus, D. pneumoniae, H. influenzae* and *Staph. aureus* (in this case a resistant strain) . . . we introduce the five most frequently used antibiotics.

Twenty-four hours later (in this greatly enlarged photograph), note that only *one* of the five leading antibiotics has stopped *all* the organisms, including the resistant staph! This is Panalba.

In your next patient with sinusitis . . . in *all* your patients with potentially-serious infections . . . provide this extra protection with your prescription:

Dosage—1 or 2 capsules 3 or 4 times a day. Supplied—Capsules containing Panmycin phosphate equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin as novobiocin sodium, in bottles of 16 and 100. *Now available:* new Panalba Half-Strength Capsules in bottles of 16 and 100.

Panalba*

(Panmycin* Phosphate plus Albamycin*)

The broad-spectrum antibiotic of *first* resort



Upjohn The Upjohn Company Kalamazoo, Michigan

*TRADEMARK, REG. U. S. PAT. OFF.

Where a poly-unsaturated oil is called for in the diet, **Wesson®** satisfies the most exacting requirements

(—and the most exacting appetites).



Compared to other readily available vegetable oils, Wesson is unsurpassed as a serum cholesterol depressant.

Each pint of Wesson contains 437-524 Int. Units of Vitamin E

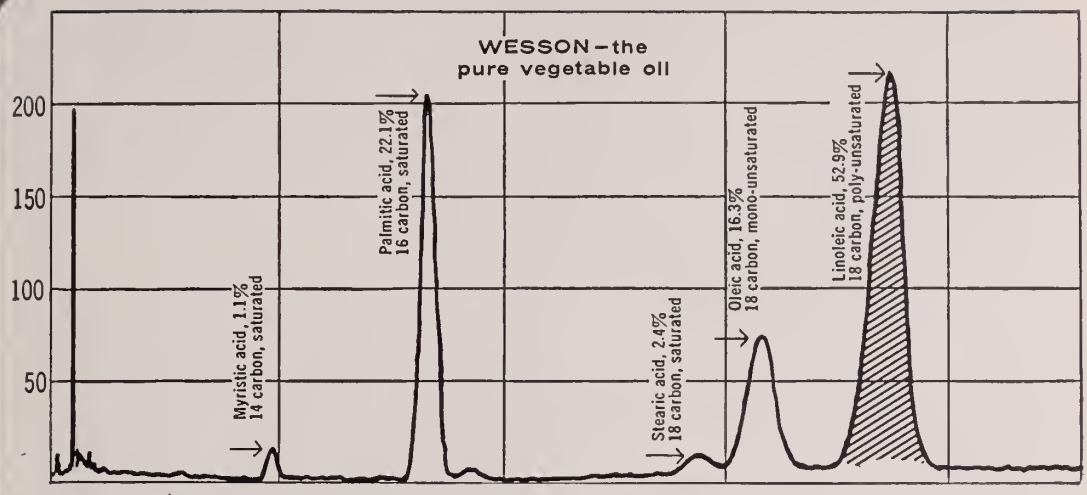
Faithful adherence to any diet is much more likely when foods taste good. The preference for Wesson—amply confirmed by its sales leadership for 59 years—has been reconfirmed in recent tests with brand identification removed. Housewives in a national probability sample indicated marked preference for Wesson, particularly by the criteria of odor, flavor (blandness) and lightness of color.

Wesson's Important Ingredients:

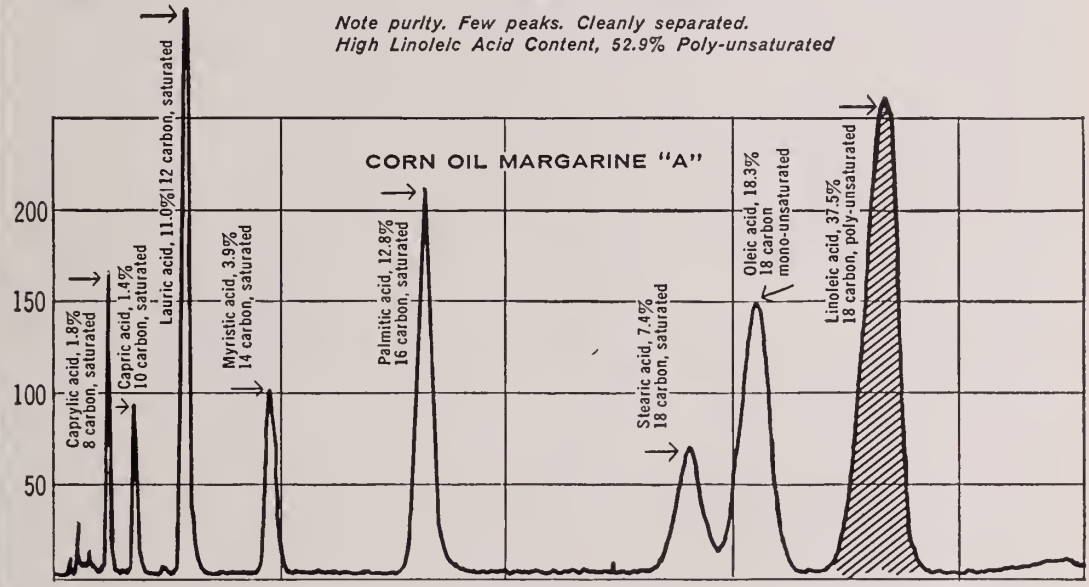
Linoleic acid glycerides	50% to 55%
Phytosterol (predominantly beta sitosterol)	0.4% to 0.7%
Total tocopherols	0.09% to 0.12%

Never hydrogenoted—completely solt free

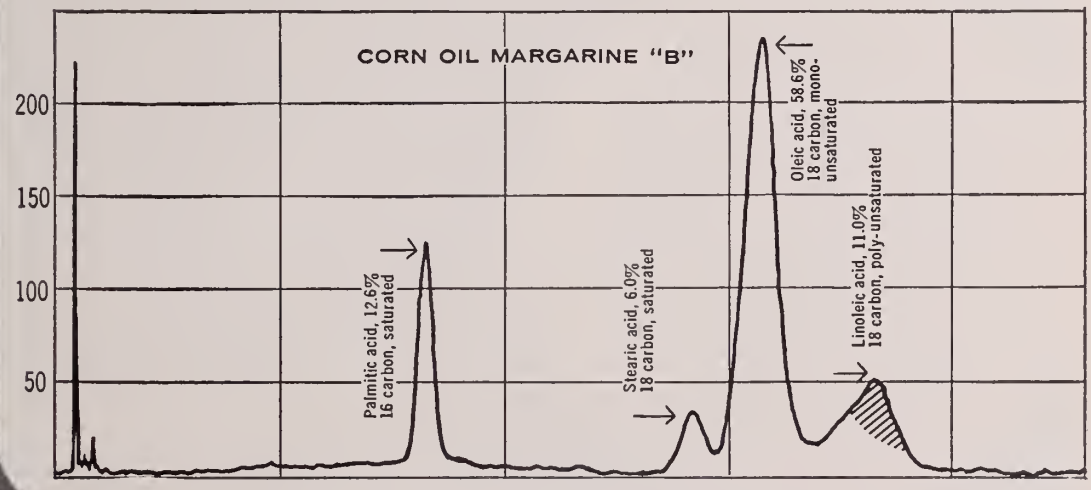
GAS CHROMATOGRAPHS *Produced by Independent Laboratory*



Note purity. Few peaks. Cleanly separated.
High Linoleic Acid Content, 52.9% Poly-unsaturated

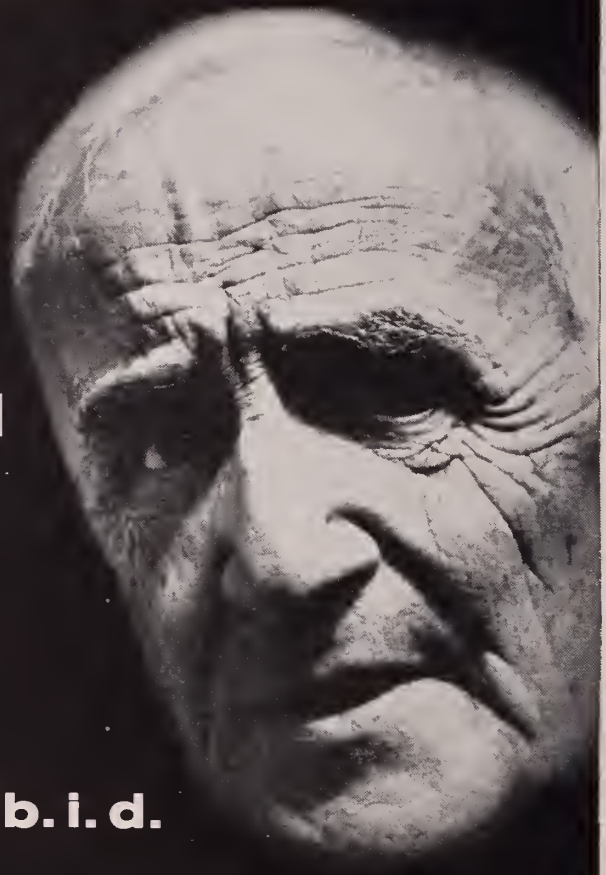


Note effect of coconut oil. Medium Linoleic Acid Content, 37.5%



Note effect of hydrogenation. Low Linoleic Acid Content, 11%

IN SENILE CONFUSION . . .



CONTINUOUS CEREBRAL OXYGENATION

WITH

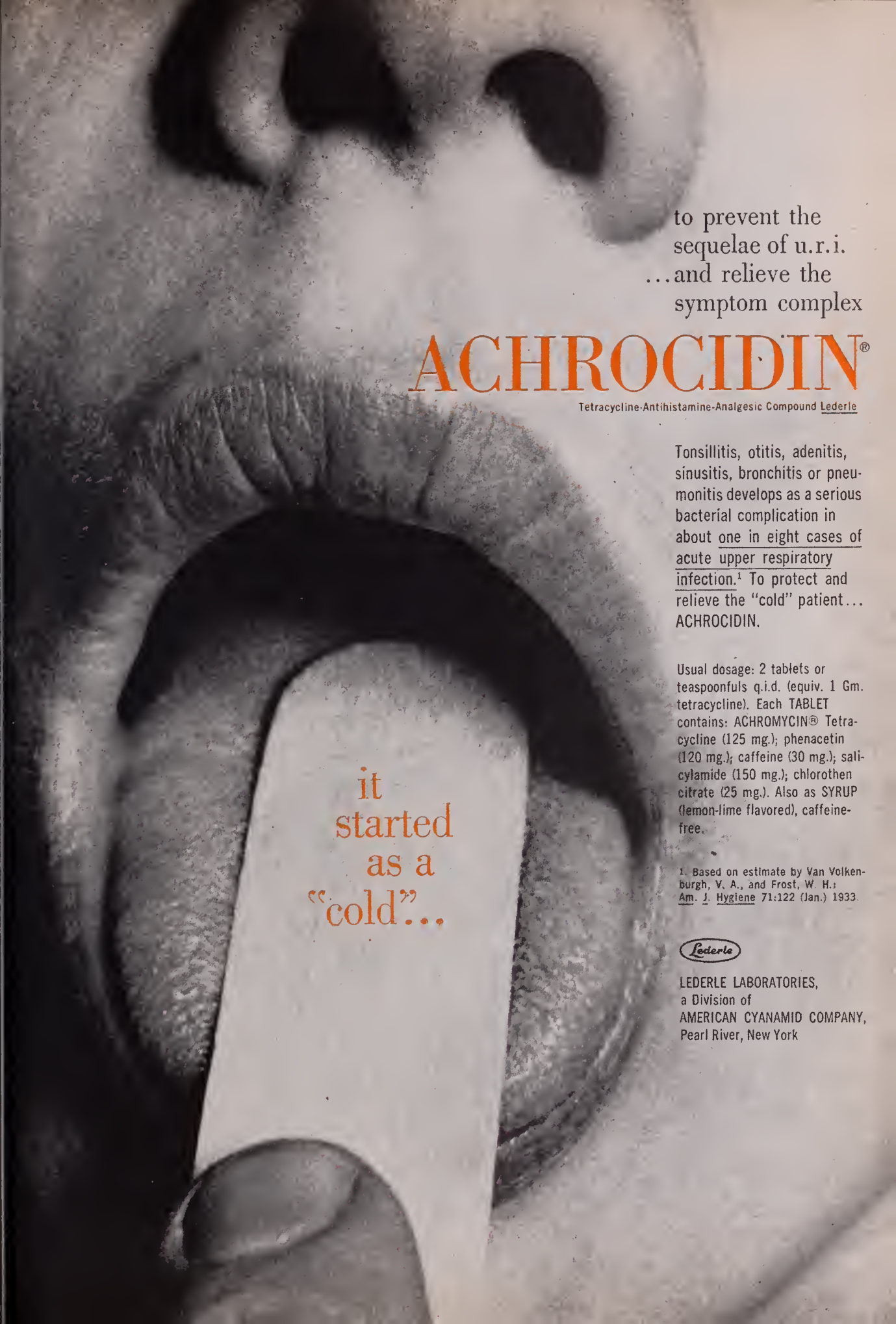
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Geroniazol TT* b.i.d.

- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
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to prevent the sequelae of u.r.i. ...and relieve the symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Tonsillitis, otitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933.

Lederle

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Pearl River, New York





1¼ Grs. Ea
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Living up to a family tradition

There are probably certain medications which are special favorites of yours, medications in which you have a particular confidence.

Physicians, through ever increasing recommendation, have long demonstrated their confidence in the uniformity, potency and purity of Bayer Aspirin, the world's first aspirin.

And like Bayer Aspirin, Bayer Aspirin for Children is quality controlled. No other maker submits aspirin to such thorough quality controls as does Bayer. This assures uniform excellence in both forms of Bayer Aspirin.

You can depend on Bayer Aspirin for Children for it has been conscientiously formulated to be the best tasting aspirin ever made and to live up to the Bayer family tradition of providing the finest aspirin the world has ever known.

Bayer Aspirin for Children—1¼ grain flavored tablets—Supplied in bottles of 50.

● We welcome your requests for samples on Bayer Aspirin and Flavored Bayer Aspirin for Children.

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GRIP-TIGHT CAP
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Greater Protection

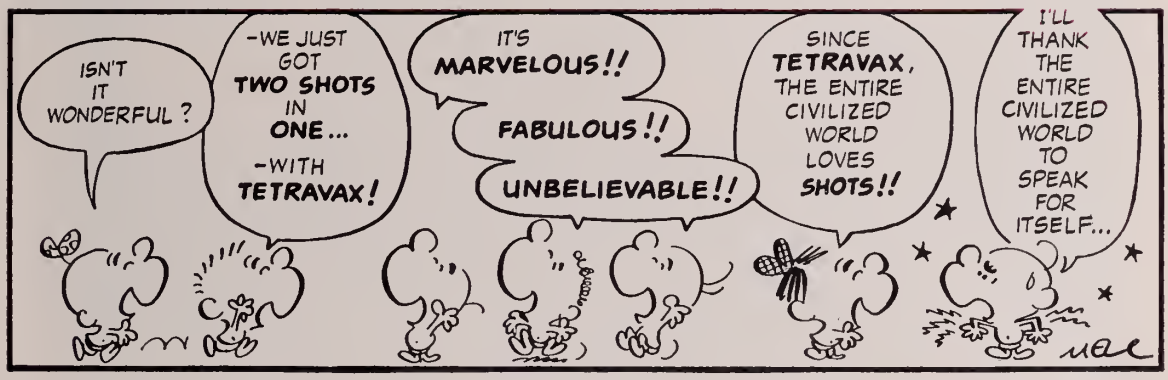


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FOR SIMULTANEOUS IMMUNIZATION AGAINST 4 DISEASES:

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DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more diseases...with fewer injections

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.



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'ACTIFED'®

Decongestant / Antihistamine

THE POTENTIATED DECONGESTANT



provides symptomatic relief of nasal congestion and rhinorrhea of allergic or infectious origin

Many patients whose symptoms are inadequately controlled by decongestants or antihistamines alone respond promptly and favorably to 'ACTIFED'.

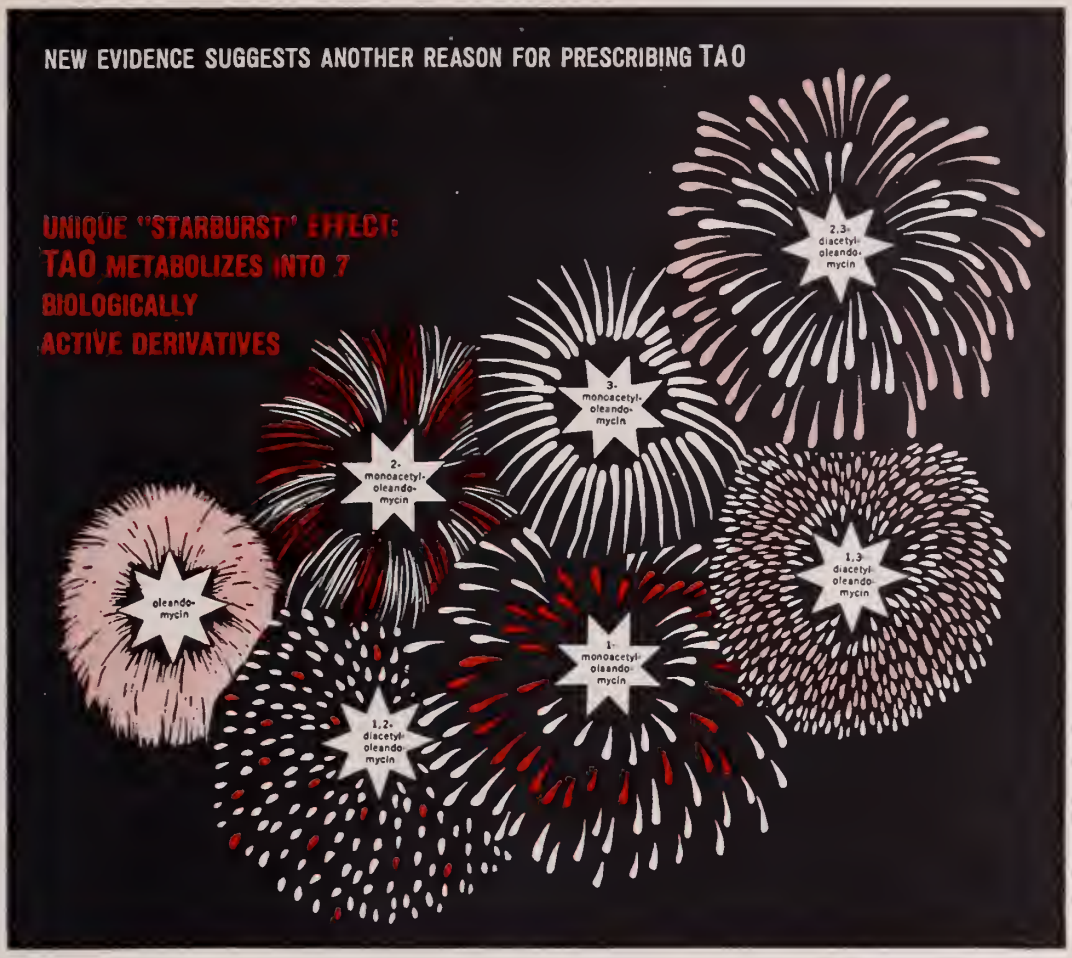
'ACTIFED' contains:	in each Tablet	in each tsp. Syrup
'Actidil'® brand Triprolidine Hydrochloride	2.5 mg.	1.25 mg.
'Sudafed'® brand Pseudoephedrine Hydrochloride	60 mg.	30 mg.

safe and effective for patients of all ages suffering from respiratory tract congestion

DOSAGE

	TABLETS	SYRUP (5 cc. tsp.)	
Adults and older children	1	2	three times daily
Children 4 months to 6 years of age	½	1	
Infants through 3 months	–	½	

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The impression that TAO is an unusually active antibiotic has steadily gained recognition by impressive clinical performance. Now come reports of in vivo and in vitro biological and biochemical evaluations that show TAO to be indeed unique.[1,2]

TAO differs from other antibiotics in that it is metabolized to multiple active compounds which remain active throughout their presence in the body. These 7 derivatives (in addition to TAO) show activity against common Gram-positive pathogens, including resistant strains of Staph. aureus.

In light of these findings, take another look at TAO performance: • 92% success in published cases of Gram-positive respiratory, skin, soft tissue and genitourinary infection • Effective against 78% of 64 "antibiotic-resistant" epidemic staphylococci. (In the same study, chloramphenicol was active against 52%; erythromycin against only 25%)[3] • No side effects in 94%; infrequent reactions mild and easily reversed • Quickly absorbed • Highly palatable.

Sound reasons to: Start with TAO to end 9 out of 10 common Gram-positive infections.

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1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. 100:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. 8:420 (Aug.) 1958.

designed for superior control of common Gram-positive infections

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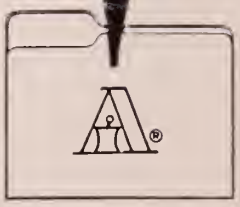
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*Thompson, R. E., and Hecht, R. A.: Am. J. Clin. Nutrition 7:311-317 (May-June) 1959.

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*Activity level is a far more meaningful basis of comparison than quantitative blood levels, as Hirsch and Finland note. Action upon pathogens is the ultimate value.
(Hirsch, H. A. and Finland, M.: Antibacterial Activity of Serum of Normal Subjects after Oral Doses of Demethylchlortetracycline, Chlortetracycline and Oxytetracycline. *New England J. Med.* 260:1099 (May 28) 1959.)

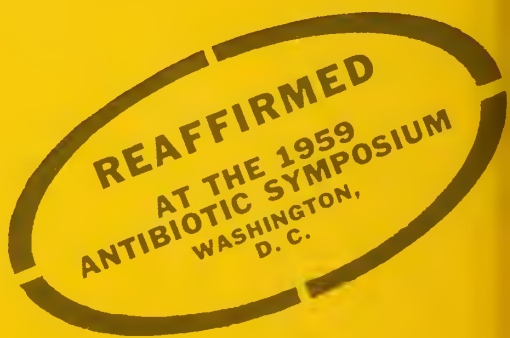
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Reports presented at Seventh Annual Symposium on Antibiotics, Mayflower Hotel, Washington, D. C., November 4-6, 1959: 1. Boger, W. P. and Gavin, J. J.: Demethylchlortetracycline: Serum Concentration Studies and Cerebrospinal Fluid Diffusion. 2. Chávez Max, G.: Therapeutic Evaluation of Demethylchlortetracycline in Human Brucellosis. 3. Duke, C. J.; Katz, S., and Donohoe, R. F.: Demethylchlortetracycline in the Treatment of Pneumonia. 4. Finland, M.; Hirsch, H. A., and Kunin, C. M.: Observations on Demethylchlortetracycline. 5. Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T.: Clinical Results with Demethylchlortetracycline in Pediatrics and Comparative Studies with Other Tetracyclines. 6. Garrod, L. P. and Waterworth, P. M.: The Relative Merits of the Four Tetracyclines. 7. Kanof, N. B. and Blau, S.: A Clinical Evaluation of Declomycin Demethylchlortetracycline in the Treatment of Pustular Dermatoses. 8. Kunin, C. M.; Dornbush, A. C., and Finland, M.: Distribution and Excretion of Four Tetracycline Analogues in Normal Men. 9. Marmell, M. and Prigot, A.: The Use of Demethylchlortetracycline in Gonorrhea, Lymphogranuloma Venereum, and Donovanosis. 10. Olarte, J.: The Sensitivity of Selected Strains of Shigella, Salmonella and Enteropathogenic *Escherichia coli* to Demethylchlortetracycline and Tetracycline. 11. Perry, D. M.; Hall, G. A., and Kirby, W. M. M.: Demethylchlortetracycline: A Clinical and Laboratory Appraisal. 12. Roberts, M. S.; Seneca, H., and Lattimer, J. K.: Demethylchlortetracycline in Genitourinary Infections. 13. Ross, S.; Puig, J. R.; and Zaremba, E. A.: Absorption of Demethylchlortetracycline in Infants and Children: Some Preliminary Observations. 14. Vineyard, J. P.; Hogan, J., and Sanford, J. P.: Clinical and Laboratory Evaluation of Demethylchlortetracycline.

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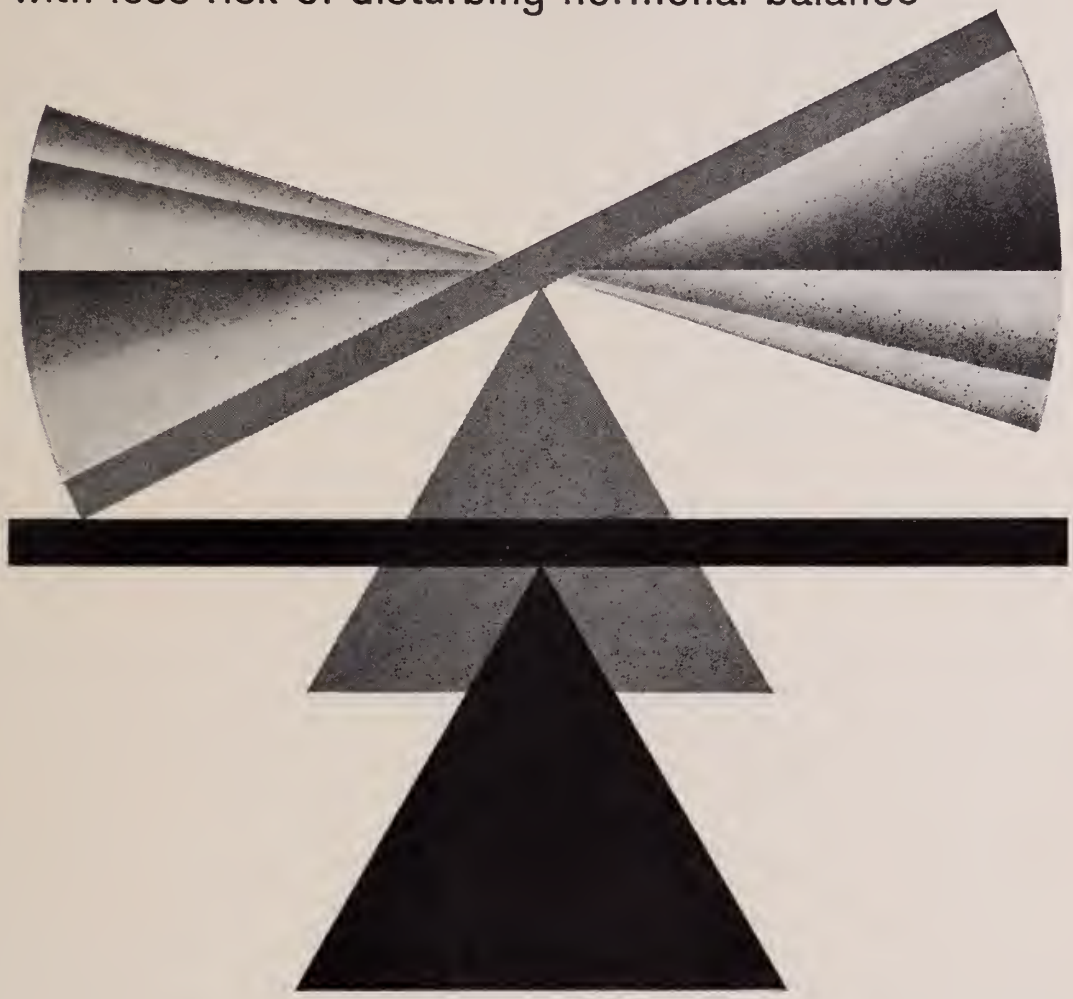
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1. Kuzell, W. C., and others.: Arch. Int. Med. 92:646, 1953. 2. Wolfson, W. Q.: J. Michigan M. Soc. 54:323, 1955. 3. Strandberg, B.: Brit. J. Phys. Med. 19:9, 1956. 4. Platt, W. D., Jr., and Steinberg, I. H.: New England J. Med. 256:823 (May 2) 1957.

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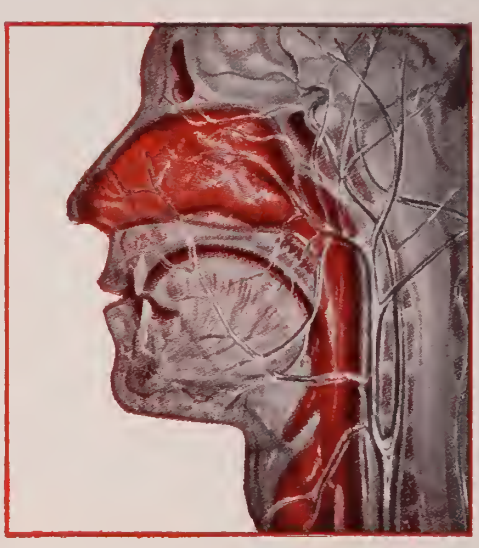
Miller, R. F.: Clin. Rev. 1:10 (July) 1958

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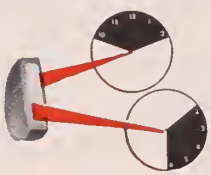
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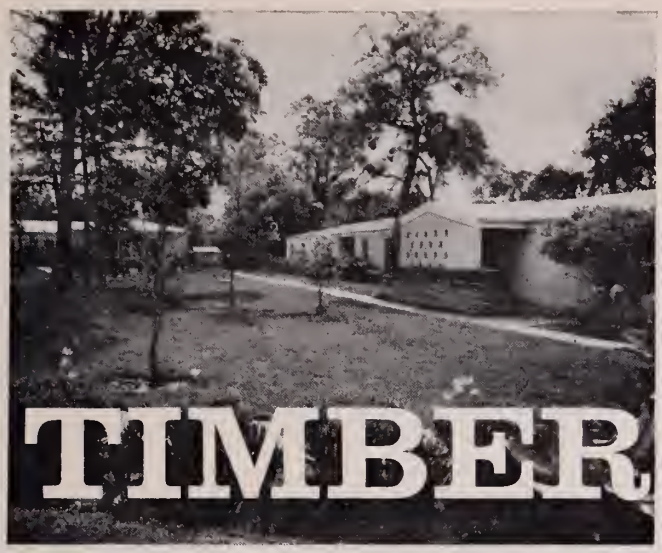
1. Fahricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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a

No. Naturally, KANTREX Injection should not be used in mild or self-limited infections, but as Yow states, "it should not be withheld in moderately severe or severe infections."[1]

Q *What properties of* KANTREX *led Yow to draw this conclusion?*

Next page, please . . .

*Kanamycin sulfate injection (Bristol)

MORE QUESTIONS on the clinical use of KANTREX

Q *What properties of* KANTREX *led You to draw this conclusion?*

a The following[2]: (1) KANTREX Injection is bactericidal, not merely bacteriostatic; (2) it is absorbed rapidly after intramuscular injection; (3) it has proved successful in many types of staph and gram-negative infections resistant to other antibiotics; and (4) it is well tolerated when used judiciously.

Q *But if I use* KANTREX *Injection, won't that help make bacteria resistant to it?*

a Numerous investigators have reported that micro-organisms do not readily develop resistance to KANTREX in a clinical setting; and emergence of resistance to KANTREX has not been a practical problem.[3,4,5,6,7,8]

Q *How does the* in vitro *activity of* KANTREX *against staph compare with that of other antibiotics?*

a Griffith and Ostrander[9] tested 794 strains of staphylococci and found that 95.2% were sensitive to KANTREX. By contrast, only 15.5% of the same organisms were sensitive to penicillin, 33.5% to tetracycline, 52.4% to erythromycin, and 71.7% to chloramphenicol.

Q *What about the sensitivity of other pathogens to* KANTREX*?*

a Leming[10] recently summarized the *in vitro* activity of KANTREX against 4493 strains of various organisms isolated from hospital patients over a 7-month period. He reported that the following percentages of these clinical isolates were sensitive to KANTREX: *Proteus mirabilis*, 98%; *Proteus morganii*, 94%; *Proteus rettgeri*, 89%; *Proteus vulgaris*, 87%; *Paracolobactrum intermedium*, 96%; *Coli-aerogenes* group, 93%; *Streptococcus viridans*, 78%; *Salmonella* and *Shigella*, 92%.

Q *What do these figures mean clinically?*

a A great deal. As Yow stated in recent reviews of KANTREX Injection, it "appears to be one of the most effective anti-staphylococcal antibiotics available today."[1,2] KANTREX Injection is also effective in the treatment of infections caused by "most strains of *E. coli*, *Proteus sp.*, the *Klebsiella pneumoniae-Aerobacter aerogenes* group, and many strains of *Pseudomonas aeruginosa* resistant to other antibiotics."[2] In another report, KANTREX Injection was placed at the head of the list of drugs "with the most chance of success" against *A. aerogenes* urinary tract infections.[11]

Q *Have these findings about* KANTREX *therapy been substantiated by other investigators?*

a Yes, indeed. Finegold,[12] who reviewed the clinical findings of 64 investigators, reported that infections which "usually responded" to KANTREX included: staph infections (including staph enteritis), *E. coli* infections (including *E. coli* gastroenteritis), atypical acid-fast bacillus infections, *Aerobacter-Klebsiella* infections, paracolon infections, *Alcaligenes* infections, *Shigella* dysentery, *Salmonella* enteritis, anthrax, amebiasis, and *E. histolytica* carrier state. Among the infections that "sometimes responded" were listed: pneumococcal infections, group A *beta*-hemolytic streptococcic infections, *Proteus* infections, gonorrhea, and paratyphoid fever.

Q *That's an impressive list. What didn't respond?*

a According to Finegold's tabulation, treatment failures were "usually" encountered in brucellosis, *Pseudomonas* infections, typhoid fever, mycotic infections and anaerobic infections.[12]

Q *How long do I have to give* KANTREX *Injection before I know whether it works or not?*

a Generally 2 or 3 days or less. Usually the effectiveness of KANTREX Injection can be determined in 24 to 36 hours. Rutenburg et al. reported that "the rapidity with which bacteria are killed by this agent is reflected by the promptness of the clinical response."[13]

Q *How long should I continue to administer* KANTREX?

a If definite clinical response does not occur within 5 days, KANTREX therapy should be stopped and the antibiotic sensitivity of the invading organism rechecked.

Q *What is the hazard of a patient developing hearing loss during* KANTREX *therapy?*

a In well hydrated patients with normal kidney function receiving KANTREX at the recommended dosage schedule, the hazard of ototoxic reactions is negligible. In patients with impaired kidney function, the risk of ototoxic reactions is sharply increased, and in such cases the dosage should be reduced. Finegold has stated: "Toxicity inherent in the drug can be avoided or minimized with careful management."[12]

Q *Why should renal impairment influence the dosage?*

a Because renal impairment delays the excretion of KANTREX Injection and causes an excessive accumulation in blood and tissues. Such excessive concentrations increase the risk of ototoxicity. Dosage recommendations emphasize that adequate serum levels can be achieved in such patients with a fraction of the dose suggested for patients with normal kidney function.

Q *Have you had any reports of blood dyscrasias?*

a None whatever.

Q *You mean, then, that a physician who uses* KANTREX *Injection judiciously should find it not only effective but also well tolerated?*

a Effective? Certainly, against almost all staph or "gram-negatives," even though they may be resistant to other antibiotics. Well tolerated? Yes, when given in recommended dosage. The physician can well agree with Yow, that while KANTREX Injection should not be used in mild or self-limited infections, "it should not be withheld in moderately severe or severe infections."[1] That, indeed, is the time to give it—first!



KANTREX® CAPSULES

for local gastrointestinal therapy... not for systemic infections

Q *If* KANTREX *is not absorbed from the G.I. tract, what are the capsules used for?*

a Preoperative bowel sterilization, and local treatment of intestinal infections due to kanamycin-sensitive organisms.

Q *What types of intestinal infections, for instance?*

a Acute and chronic shigellosis,[14] acute and chronic salmonellosis,[4,14,15,18] amebiasis,[17] bacillary dysentery,[18] infantile diarrhea,[16,18] gastroenteritis,[19] and staphylococcal enterocolitis.[2]

Q *For preoperative bowel sterilization, why should I switch from neomycin to* KANTREX *Capsules?*

a Because KANTREX has been rated superior to neomycin for this purpose.[20,21,22] Out of 30 intestinal antiseptics studied, KANTREX was designated "the only single agent classified as a preferred drug."[21] KANTREX "consistently eliminated all aerobic bacteria within 72 hours (and often within 24 to 36 hours) if a purgative was given with the first dose to expedite passage through the gastrointestinal tract."[12]

Q *Is that all the advantage* KANTREX *has over neomycin for preoperative bowel sterilization?*

a Not at all, there are several others. Diarrhea, nausea and vomiting have not been observed with KANTREX, though they occur frequently with neomycin; yeasts do not proliferate, in contrast to rapid growth with neomycin; and clostridia are well controlled with KANTREX, and not controlled with neomycin.[20,21,22]

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OTHER ROUTES OF ADMINISTRATION
KANTREX should be used by intravenous infusion only when the intramuscular route is impracticable. KANTREX can also be employed for intraperitoneal use, aerosol treatment, and as an irrigating solution. See package insert for directions.

PRECAUTIONS
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For preoperative bowel sterilization: 1.0 Gm. (2 capsules) every hour for 4 hours, followed by 1.0 Gm. (2 capsules) every 6 hours for 36 to 72 hours.

For intestinal infections: Adults: 3.0 to 4.0 Gm. (6 to 8 capsules) per day in divided doses for 5 to 7 days. Infants and children: 50 mg. per kg. per day in 4 to 6 divided doses for 5 to 7 days.

PRECAUTION
Preoperative use of KANTREX Capsules is contraindicated in the presence of intestinal obstruction. Although only negligible amounts of KANTREX are absorbed through intact intestinal mucosa, the possibility of increased absorption from ulcerated or denuded areas should be considered.

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Wein, A. B.: The Use of Carisoprodol in Orthopedic Surgery and Rehabilitation. Proceedings of the Symposium on The Pharmacology and Clinical Usefulness of Carisoprodol. Wayne State University Press, Detroit, 1959, p. 156.

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MARCH 21, 22, 23, 24, 1960 (Monday, Tuesday, Wednesday, Thursday)

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Speakers

MONDAY, MARCH 21

JOHN C. MCCLINTOCK, M.D., (Guest), Albany, N. Y., Assoc. Clinical Prof. of Surgery, Albany Medical College
Problems in the Treatment of Hyperthyroidism

CHARLES C. HIGGINS, M.D., (Guest), Cleveland, Ohio, Dept. Head, Cleveland Clinic Foundation Hospital
Exstrophy of the Bladder: End Result in 157 Cases

FRANK GLENN, M.D., (Guest), New York City, Lewis Atterbury Stimson Prof. of Surgery, Cornell University Medical College; Surgeon-in-Chief, The New York Hospital
Surgical Treatment of Hyperparathyroidism

A. ROBERT CORDELL, M.D., Winston-Salem, N. C., Instructor in Surgery, Bowman Gray School of Medicine; Attending Surgeon, N. C. Baptist Hosp.
Gastrointestinal Hemorrhage Following Abdominal Aortic Surgery

GEORGE H. BUNCH, JR., M.D., Columbia, S. C.
The Surgical Approach to Intrathoracic Goiter

J. LYNWOOD HERRINGTON, JR., M.D., Nashville, Tenn., Ass't Prof. of Clinical Surg., Vanderbilt Univ. School of Medicine
Some Technical Errors in the Performance of Gastric Surgery with Comments on Their Prevention and Correction

BENJAMIN T. BEASLEY, M.D., Atlanta, Ga.
Presidential Address

J. MOREHEAD EMMETT, M.D., Clifton Forge, Va., Chief Surgeon, Chesapeake and Ohio Railway Co.

MEADE C. EDMUNDS, M.D., Clifton Forge, Va., Assoc. Surg., Chesapeake and Ohio Hosp.
Our Experience with Large Series of Consecutive Cholangiograms Created During Operative Procedures Upon the Gallbladder and Bile Ducts

WILLIAM T. WILLIAMS, M.D., Mease Clinic, Dunedin, Fla.
Gastrectomy in the Patient Over Sixty

ROBERT J. O'DONNELL, M.D., Washington, D. C., Ass't. Clinical Instr., Georgetown University Medical Center
Clinical Aspects of Traumatic Rupture of the Spleen

ROBERT G. CHAMBERS, M.D., Baltimore, Md.

CARLETON C. DOUGLASS, M.D., Baltimore, Md.
The Treatment of Advanced Carcinoma of the Intrinsic Larynx and Carcinoma of the Extrinsic Larynx

ALTON OCHSNER, M.D., New Orleans, La., Dir. of Surg., Ochsner Clinic and Ochsner Foundation Hosp., Prof. of Clinical Surgery, Tulane Univ. School of Med.

JOHN BLALOCK, M.D., New Orleans, Member of Staff, Ochsner Clinic and Ochsner Foundation Hosp., Instr. in Surg., Tulane Univ. School of Med.

FRANK MCPHERSON, M.D., New Orleans, La., Fellow in Surg., Alton Ochsner Medical Foundation Hosp.
Gastric Carcinoma

FRANK V. COMAS, M.D., Oak Ridge, Tenn., Institute of Nuclear Studies
Exploratory Laparotomy to Minimize "Geographical Misses" in Radiotherapy

TUESDAY, MARCH 22

JOHN C. MCCLINTOCK, M.D., (Guest), Albany, N. Y., Assoc. Clinical Prof. of Surg., Albany Medical College
Management of Exophthalmos

CHARLES C. HIGGINS, M.D., (Guest), Cleveland, Ohio, Dept. Head, Cleveland Clinic Foundation Hospital
Present Day Treatment of Carcinoma of the Bladder

FRANK GLENN, M.D., (Guest), New York City, Lewis Atterbury Stimson Prof. of Surgery, Cornell Univ. Med. College; Surgeon-in-Chief, The New York Hosp.
Complications Following Biliary Tract Surgery

JOHN M. SLAUGHTER, M.D., Fairfield, Ala., Chief of Surgical Service., Lloyd Noland Hosp.
Post-Cholecystectomy Symptoms—Causes and Prevention

HARRY LEE CLAUD, M.D., Washington, D. C.

OSCAR B. HUNTER, M.D., Washington, D. C.
Breast Disease and Malignancy—Review of 4000 Cases

A. HAMBLIN LETTON, M.D., Atlanta, Ga.

JOHN P. WILSON, M.D., Atlanta, Ga.
Clinical Application of Blood Volume Determinations in Surgery

J. RICHARD AMERSON, M.D., Atlanta, Ga., Assoc., in Surg., Emory University Medical School.
Massive Gastrointestinal Hemorrhage Due to Hereditary Hemorrhagic Telungiectasia

FRANCIS M. MASSIE, M.D., Lexington, Ky., Senior Surgeon, Lexington Clinic; Surgical Staff., St. Joseph Hosp.
An Analysis of 1500 Breast Biopsies

CHARLES D. KNIGHT, M.D., Shreveport, La., Surgeon, Highland Clinic; Attending Surgeon, Confederate Memorial Medical Center.

WALTER W. MCCOOK, M.D., Shreveport, La., Attending Surgeon and Chief of Thoracic Surgery, Confederate Memorial Medical Center
Traumatic Diaphragmatic Hernia

WEDNESDAY, MARCH 23

ALEXANDER T. BUNTS, M.D., (Guest), Cleveland, Ohio, Associate Neurosurgeon, Cleveland Clinic
The Mimicry of Spinal Cord Tumors

JONATHAN E. RHOADS, M.D., (Guest), Philadelphia, Pa., John Rhea Barton Professor of Surgery, School of Medicine, Univ. of Pa.; Director, Harrison Dept. of Surgical Research, Schools of Medicine, Univ. of Pa.
The Radical Treatment of Pancreatoduodenal Carcinomas

DENTON A. COOLEY, M.D., (Guest), Houston, Texas, Assoc. Professor of Surgery, Baylor Univ. College of Medicine; Chief, Cardiovascular Section, Texas Children's Hospital
Surgical Treatment of Mitral Stenosis and Mitral Insufficiency

ROBERT W. BUXTON, M.D., Baltimore, Md., Professor of Surgery, University of Maryland
Smooth Muscle Tumors of the Gastrointestinal Tract

J. HARVEY JOHNSTON, JR., M.D., Jackson, Miss., The Surgical Clinic, Ass't. Clinical Professor of Surgery, Univ. of Miss. Medical Center
Postoperative Pancreatitis

KENNETH PICKRELL, M.D., Durham, N. C., Professor of Plastic Surgery, Duke Univ. School of Medicine

NICHOLAS GEORGIADE, M.D., Durham, N. C., Assoc. Professor of Plastic Surgery, Duke Univ. School of Medicine
The Correction of Rectal Incontinence

JAMES H. YOUNG, M.D., Anderson, S. C.
Cardiac Arrest

CHARLES R. ZIRKLE, M.D., Knoxville, Tenn.
Perforating Carcinomas of the Colon

FRANK S. JOHNS, M.D., Richmond, Va., Professor Emeritus of Surgery, Medical College of Va., Surgeon-in-Chief, Johnston-Willis Hospital
The Tragedies of Biliary Surgery

HU C. MYERS, M.D., Philippi, W. Va., Chief of Surgery, Broaddus Hospital and Myers Clinic
Results in Treatment of Gastric Carcinoma

DENNIS ROSENBERG, M.D., New Orleans, La., Ass't. Professor Clinical Surgery, Tulane Univ.

H. OLINDE, M.D., New Orleans, La., Senior Resident, Thoracic Surgical Service, Tulane Univ.
Pulmonary Resection for Benign Lesions

HAROLD P. MCDONALD, M.D., Atlanta, Ga., Chief of Dept. of Urology, St. Joseph Hosp.
Vesical Neck Obstructions in Children

CHARLES S. WHITE, JR., Washington, D. C., Attending Surgeon, Doctors' Hospital

P. K. SARKAR, M.D., Washington, D. C., Resident in Surgery, Doctors' Hospital

S. C. BHATTACHARJEE, M.D., Washington, D. C., Resident in Surgery, Doctors' Hospital
Transpyloric Herniation of the Antral Mucosa into the Duodenum

HOWARD MAHORNER, M.D., New Orleans, La., Clinical Professor of Surgery, Louisiana State Univ. School of Medicine; Director, Mahorner Clinic

WALTER F. BECKER, M.D., New Orleans, La., Clinical Ass't. Prof. of Surg., La. State Univ. School of Med.
Acute Cholecystitis; Optimum Time for the Extent of Operation

T. B. PATTON, M.D., Birmingham, Ala., Assoc. Prof. of Surgery, Medical College of Alabama
Surgical Management of the Patient with Undiagnosed Massive Upper Gastrointestinal Tract Bleeding

Winner of First Place, Scientific Paper Award Contest.
Name and Title to be Announced

THURSDAY, MARCH 24

ALEXANDER T. BUNTS, M.D., (Guest), Cleveland, Ohio, Associate Neurosurgeon, Cleveland, Ohio
The Surgical Treatment of Spasmodic Torticollis

JONATHAN E. RHOADS, M.D., (Guest), Philadelphia, Pa., John Rhea Barton Professor of Surgery, School of Medicine, Univ. of Pa.; Director, Harrison Dept. of Surgical Research, School of Medicine, Univ. of Pa.
Preventive Surgery: How Far Should the Surgical Prophylaxis of Cancer Go?

DENTON A. COOLEY, M.D., (Guest), Houston, Texas, Assoc. Professor of Surgery, Baylor Univ. College of Medicine; Chief, Cardiovascular Section, Texas Children's Hospital.
Surgical Considerations in Arteriosclerotic Occlusive Disease

WILLIAM R. SANDUSKY, M.D., Charlottesville, Va., Assoc. Professor of Surgery, University of Va. School of Medicine
Pseudocyst of the Pancreas: An Evaluation of Various Surgical Procedures

C. MARTIN RHODE, M.D., Augusta, Ga., Chief, Surgical Service, VA Hosp., Assoc. Clinical Professor of Surg., Medical College of Ga.
Treatment of Hand Infections

WILLIAM H. BIZOT, M.D., Louisville, Ky., Assoc. in Surg., Univ. of Louisville School of Medicine; Attending Surgeon VA Hospital
Tetanus in Louisville

LESLIE GUIDRY, M.D., New Orleans, La., Instructor in Surg., La. State Univ. School of Med.
Chronic Idiopathic Pericardial Effusion

ARLIE R. MANSBERGER, JR., M.D., Baltimore, Md., Ass't. Professor of Surgery, Univ. of Md.
The Value of Ammonia Determinations on Peritoneal Fluid in the Differential Diagnosis of Pathological States Resulting in Hemorrhagic Ascites

RICHARD J. FIELDS, JR., M.D., Centreville, Miss., Surgeon, Field Clinic and Field Memorial Hosp.
The Elderly Thyrotoxic

ERLE E. PEACOCK, JR., M.D., Chapel Hill, N. C., Ass't. Prof Surgery, Univ. of N. C. School of Medicine
The Use of Composite Tissue Homografts in the Restoration of Digital Flexor Tendon Injuries

Panel Discussions

MONDAY, MARCH 21, 4:30 P.M.

ACUTE INTESTINAL OBSTRUCTION

Moderator: WILLIAM O. BARNETT, M.D., Jackson, Miss., Clinical Ass't. Prof. Surg., Univ. of Miss. Med. Center

Discussers: (a) Small Intestine
ISIDORE COHN, JR., M.D., New Orleans, La., Prof. Surg., La. State Univ. School of Medicine

(b) Colon
J. D. MARTIN, JR., M.D., Atlanta, Ga., Prof. and Chairman, Dept. Surg., Emory Univ. School of Medicine

(c) Infants and Children
J. WARNER DUCKETT, M.D., Dallas, Texas, Assoc. Prof. Clinical Surg., Southwestern Medical School Univ. of Texas

TUESDAY, MARCH 22, 2:30 P.M.

FORUM ON PROGRESS IN SURGERY

Twelve papers of ten minutes each will be selected on a competitive basis. Announcement of selection of papers was made in January 1960 and the names of authors and titles of papers will appear in the final program.

The committee in charge of this Forum is composed of:

CURTIS ARTZ, M.D., Jackson, Miss., Chairman
OSCAR CREECH, M.D., New Orleans, La.
FREDERICK K. COOPER, Atlanta, Ga.

WEDNESDAY, MARCH 23, 4:30 P.M.

WHEN THINGS GO WRONG IN SURGERY—WHAT SHALL ONE DO?

Moderator: WILLARD PARSONS, M.D., Vicksburg, Miss., Chief of Staff and Dir. of Surg., Vicksburg Hospital and Clinic; Clinical Assoc. Prof. of Surg., Univ. of Miss. Medical Center

Discussers: HARWELL WILSON, M.D., Memphis, Tenn., Prof. and Chairman, Dept. of Surg. Univ. of Tenn. Medical School
CURTIS P. ARTZ, M.D., Jackson, Miss., Assoc. Prof. of Surg., Univ. of Miss. Medical Center
HOWARD MAHORNER, M.D., New Orleans, La., Clinical Prof. of Surg., La. State Univ. School of Medicine; Director, Mahorner Clinic
W. STERLING EDWARDS, M.D., Birmingham, Ala., Ass't. Prof of Surg., Medical College of Ala.

Information

Speakers are listed as nearly as possible as they will appear in the completed program.

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1. Ford, R. A., and Blanchard, K.: Journal-Lancet 78:185, 1958.

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1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

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Primary Tumors of the Mediastinum*

• The author discusses the types of tumors of the mediastinum, differential diagnosis, and the means of securing further diagnostic information. He concludes that surgical removal is the treatment of choice whether the tumors are malignant or benign.

F. HENRY ELLIS, JR., M. D.
Rochester, Minn.

IN this era of startling and dramatic advances in cardiovascular surgery, the attention of physicians interested in thoracic diseases has been diverted, understandably, from the subject of mediastinal tumors. Historically, however, lesions of the mediastinum were among the first intrathoracic abnormalities to be attacked surgically. As early as 1897 an article appeared in the English literature describing the surgical approach to the anterior mediastinum and predicting accurately the later development of this field of surgery.[1] Reference is made to an attempt by the French surgeon, Péan, to remove a mediastinal tumor with the use of a "diving bell" to maintain proper intrathoracic pressure relationships. Prior to this time most mediastinal lesions, if treated surgically, were treated by needle aspiration in the hope of evacuating a mediastinal cyst or of removing the associated effusion.[2]

In subsequent years occasional reports were made of the surgical removal of mediastinal tumors through sternal splitting and thoracoplastic flap incisions. Modern aggressive surgery on the mediastinum had its origin in the 1920's and Harrington's contributions to this field are pre-eminent. In 1929 he reported [3] on 17 cases of intrathoracic tumors in which he had removed the tumors surgically, with one operative death.

Today, of course, little thought is given to the surgical treatment of mediastinal tumors. The risk of the operative procedure is negligible and the presence of an abnormal mediastinal shadow is sufficient in most instances to warrant consideration of surgical removal. Final decision regarding the need for surgical intervention is determined to a great extent by the differentiation of primary cysts and neoplasms of the mediastinum from other mediastinal abnormalities.

Differential Diagnosis

In discussing the various aspects of differential diagnosis, the mediastinum and

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* Read at the New Orleans Graduate Medical Assembly, New Orleans, Louisiana, March 3, 1959.

Section of Surgery, Mayo Clinic and Mayo Foundation,† Rochester, Minnesota.

† The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.

its subdivision should be accurately defined. This knowledge is helpful diagnostically since specific lesions are more apt to occur in certain parts of the mediastinum.

The mediastinum can be subdivided into three main divisions: (1) the anterior mediastinum, which lies anterior to the pericardium and contains loose areolar tissue, lymph nodes, and small blood vessels; (2) the midmediastinum, which contains the pericardium and its contents and other structures within this plane, namely, the superior vena cava, the ascending aorta, the tracheal bifurcation and the pulmonary artery; and (3) the posterior mediastinum, which lies behind the pericardium and contains the descending aorta, the vagus nerves, the esophagus, and the thoracic duct. Because the superior mediastinum may be the site of many of the same lesions that occur at a lower level, it seems unnecessary to make a further division into superior and inferior mediastinum.

Proper distinction between primary mediastinal cysts and neoplasms and metastatic lesions, lymphomas, aneurysms, as well as intrapulmonary lesions, is important. The treatment may vary and the surgical approach may differ from one condition to the next. Unfortunately this distinction is not always easy but there are certain diagnostic methods that may be of considerable help.

A thorough roentgenographic survey, including lateral and oblique views, is of great help not only in localizing the lesion but in determining whether or not the lesion is intrapulmonary or extrapulmonary. Fluoroscopic examination may occasionally be indicated but caution is necessary in the interpretation of visible pulsations since it is hard to differentiate between expansile and transmitted pulsations.

The normal thymic shadow may be a source of diagnostic error in children. It usually begins to decrease in size after the first year of life and by the age of 3 years it usually has disappeared completely. About 2 per cent of children more than 4 years of age will have a thymus that can be recognized as such on the roentgenogram of the thorax. Widening of the mediastinum in children, due to the thymus, may be either unilateral or bilateral. The borders are smooth and the lateral border is generally straight or slightly concave. It does not pulsate except by transmitted pulsation and it does not contain calcium. The normal thymus may project into the right thoracic cavity. A notch between this peninsula of the thymus and the right cardiac border is usually seen. Such a notch, when present, is good evidence that mediastinal widening is due to the thymus and not to enlarged mediastinal nodes.

In adults, bilateral midmediastinal, lobulated lesions may suggest enlargement of the hilar nodes rather than the presence of a primary mediastinal tumor. In such cases biopsy of node-bearing tissue overlying the scalene muscle may be of considerable value. Lymphomas, Boeck's sarcoid and, occasionally, metastatic lesions may be diagnosed in this manner.

Retrograde aortography and angiocardiography are occasionally of help in distinguishing primary mediastinal tumors from other intrathoracic abnormalities, vascular as well as nonvascular. The use of I^{131} in a tracer dose may point, on occasion, to the diagnosis of an intrathoracic thyroid adenoma.

General Considerations

Once the diagnosis of a primary lesion of the mediastinum has been made, a more precise diagnosis is desirable.

Specific lesions occur commonly in certain locations and these are indicated diagrammatically in the figure. Intrathoracic goiters, thymomas, teratomas and vascular tumors are usually located in the anterior mediastinum. In the midmediastinum are located enterogenous cysts, mediastinal granulomas and pericardial cysts. The posterior mediastinum may contain neurogenic tumors, enterogenous anomalies and occasionally an intrathoracic goiter.

The relative frequency of these lesions

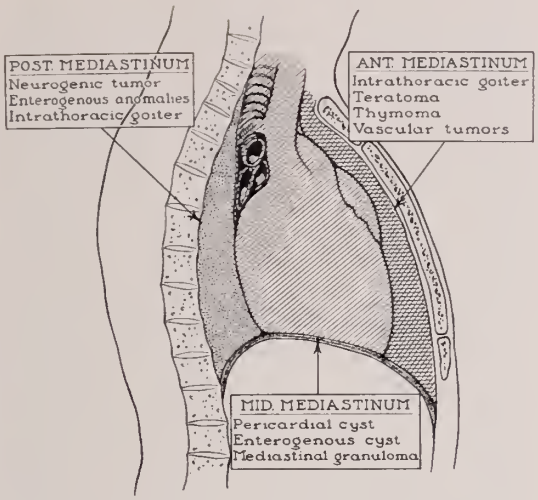


Figure 1. Diagram of divisions of mediastinum and list of lesions contained therein.

is indicated in Table 1. These cases are summarized from recent reports of relatively large series of cases of mediastinal tumors.[4-12] Excluded from consideration are such lesions as lymphomas, metastatic carcinomas and aortic aneurysms.

Neurogenic tumors occurred most commonly and accounted for about 32 per cent of the total tumors. Nineteen per cent of the lesions were teratomatous tumors. Enterogenous cysts occurred in 15 per cent of the patients and thymomas in 9 per cent. Less common lesions are pericardial cysts, undifferentiated malignant neoplasms, and intrathoracic goiters. Of the total group of lesions, 13.7 per cent were malignant. It is interesting that a slightly higher rate of malignant lesions is seen among children.[13] In young patients we have not encountered examples of thymoma, intrathoracic goiter, or pericardial cyst, whereas vascular tumors and cystic hygromas are commoner than in adults (Table 2).

TABLE 2
PERCENTAGE INCIDENCE OF MEDIASTINAL TUMORS

Lesion	Incidence (Per Cent)	
	Adults	Infants and Children
Neurogenic tumors	31.6	32.8
Teratomatous tumors	18.9	27.6
Enterogenous cysts	14.9	17.2
Thymomas	9.2	0
Pericardial cysts	8.0	0
Vascular tumors	Rare	8.6
Cystic hygroma	Rare	6.9
Intrathoracic thyroid	5.1	0
Undifferentiated malignant lesion	4.2	6.9
Miscellaneous	8.1	
Total	100.0	100.0
Malignant lesions	13.7	24

Neurogenic Tumors

As mentioned previously, neurogenic tumors are the commonest mediastinal tumor. They may be divided into two main groups, depending on their origin: those that arise from nerve sheaths, and those that arise from nerve cells. In the thorax they may arise from intercostal nerves,

TABLE 1
PRIMARY TUMORS OF THE MEDIASTINUM: SUMMARY OF NINE REPORTED SERIES [4-12]

Lesion	Benign	Malignant	Total	
			Number	Per Cent
Neurogenic tumors	227	34	261	31.6
Teratomatous tumors	135	21	156	18.9
Enterogenous cysts			123	14.9
Bronchogenic	102			
Esophageal	6			
Gastric	3			
Enteric	2			
Indeterminate	10			
Thymomas	56	20	76	9.2
Pericardial cysts	66		66	8.0
Intrathoracic thyroid	39	3	42	5.1
Undifferentiated carcinoma and sarcoma		35	35	4.2
Miscellaneous	67		67	8.1
Total	713	113 (13.7)	826	100.0

sympathetic nerves or, rarely, the vagus nerve. Tumors of the nerve sheath, generally referred to as schwannomas (neurilemmomas or neurinomas) comprise the largest group and, for the most part, are benign. Nerve cell tumors are made up of benign and malignant growths, the ganglioneuroma representing the former and the neuroblastoma, the latter. Finally, there exists a small group of mediastinal neurogenic tumors, commonly referred to as "neurofibromas" that contain all the nerve elements, namely, axons, sheath cells and connective tissue. A few of the neurofibromas appear grossly as a tangled plexiform mass, and when in this form they are invariably associated with the stigmas of generalized neurofibromatosis. Carey and associates [14] recently reported on 140 cases of neurogenic tumors encountered at the Mayo Clinic. There were 87 nerve-sheath tumors, 44 nerve-cell tumors and nine tumors made up of all nerve elements. Only six of the total group were malignant (Table 3).

Neurogenic tumors characteristically lie in the posterior mediastinum; on lateral roentgenographic views of the thorax they appear to extend to the posterior limits of the intervertebral foramen. Exceptions occur when the lesion arises from nerve tissue other than intercostal or sympathetic nerves, such as the vagus nerve. Tumors of the nerve sheath are grossly spherical, solid, yellowish tumors which may be multiple. Surgical removal is easily accomplished because the lesions are well encapsulated. Occasionally a dumbbell-shaped tumor is encountered, a portion of the growth being located within the spinal canal.

TABLE 3
NEUROGENIC TUMORS

Cell Origin of Tumors		Cases
Nerve sheath		87
Schwannoma		
Benign	86	
Malignant	1	
Nerve cell		44
Ganglioneuroma	39	
Neuroblastoma	5	
All nerve elements		9
Plexiform	5	
Nonplexiform	4	
Total		140

Ganglioneuromas are encountered frequently in children and, in contrast to schwannomas, they are poorly defined on lateral roentgenographic views of the thorax. Posteroanterior views show an elongated, flattened, or triangular density with the broad base toward the mediastinum. Grossly they may be indistinguishable from nerve-sheath tumors but usually they are fairly soft in consistency and possess a glistening, homogeneous, gray or sand-colored surface. They usually are not well encapsulated and frequently adhere to surrounding structures. Surgical removal may be technically difficult.

The malignant neuroblastoma is encountered primarily in children. Thoracic roentgenograms are not diagnostic but occasionally show evidence of multiple areas of calcification within the tumor. Complete removal of the tumor may not be possible. In such cases x-ray therapy may be of value postoperatively and the prognosis may not necessarily be hopeless. Prognosis after surgical removal of benign forms of neurogenic tumors is excellent. Even when such tumors are incompletely removed, recurrence is rare.

Teratomatous Tumors

Teratomatous tumors are found in the thorax, next in frequency to their location in the gonads of males and females. They are congenital lesions and probably arise as an aberration in local somatic development. Pathologically these lesions are composed primarily of dermal elements, in which case they are almost always cystic and are termed "dermoid cysts," or they are characterized by their multidermal origin and are called "teratomas." Teratomas may contain cystic areas but many are solid. Whereas malignancy rarely develops in a dermoid cyst, it is a frequent occurrence in solid teratomas. Coursley [15] recently reviewed the pathologic and clinical data on 74 Mayo Clinic patients operated on during a thirty-three year period for removal of a

teratomatous tumor. Sixty-four of the tumors were benign. Four of them were solid and the rest were typical dermoid cysts. There were 10 teratocarcinomas.

When malignant change does occur, it usually takes place in the glandular epithelium of the lesion, thus leading to an adenocarcinoma which, in most instances, is of high grade. Occasionally the malignant lesion may take the form of a seminoma or embryonal carcinoma similar to tumors seen in the testis.

Teratomatous tumors characteristically are located in the anterior mediastinum. Only rarely has one been encountered which was located in the posterior mediastinum. In thoracic roentgenograms they appear as fairly dense masses, occasionally containing amorphous deposits of calcium. The calcium appears as scattered masses, rather than as diffuse, small densities. The margins of the tumor are sharp and well defined. The tumors may assume large proportions and are potentially dangerous lesions which should be removed surgically. Not only can they grow and become malignant but also they can perforate. When perforation occurs, highly irritating lipoid material from within the lesion may be discharged into the lung and severe pneumonitis develops with a characteristic clinical syndrome. In such cases operation is difficult and it may be necessary to remove a portion of the lung with the lesion.

Enterogenous Anomalies

The next commonest mediastinal lesions are the various enterogenous anomalies. These also are congenital anomalies, and they may assume various forms. They may be spherical or cystic, in which case the term "enterogenous cyst" is appropriate. A further subdivision of this category of enterogenous cysts may be made, depending on the microscopic appearance of the lining of the wall of the cyst. Thus, there may be bronchial cysts, esophageal cysts, gastric cysts, and intestinal cysts.

A second category of such anomalies consists of elongated tubular structures that resemble a portion of the gastrointestinal tract in external appearance. The mucous membrane lining of these anomalies is similar to that of a portion of the alimentary tract, and the anomalies may be separate from, attached to, or communicating with a portion of the alimentary canal. Anomalies of this type have been referred to in the literature as "duplications of the alimentary tract." These lesions are less common and are found oftener among infants and children than among adults.

Enterogenous cysts may produce symptoms of advanced respiratory impairment, particularly in infants and children. Symptoms are due to compression of the tracheobronchial tree, to which these lesions may be attached. They present a constant roentgenographic appearance. They tend to lie in the midmediastinum, particularly in the region of the bifurcation of the trachea. They also may be encountered posteriorly, in the vicinity of the esophagus. They are sharply circumscribed, dense and uniformly oval. The association between enterogenous cysts and anomalies of the vertebral column has occasioned considerable comment in the literature.[16] The association is sufficiently frequent for one to be able to make the correct diagnosis in the majority of patients who have mediastinal lesions and anomalies of the thoracic and cervical vertebrae.

Thymomas

Tumors of the thymus gland comprise a challenging group of mediastinal tumors. They are located in the anterior mediastinum, usually in its upper portion. The term "thymoma" has been applied to neoplasms arising in the thymus gland. Grossly these lesions are lobulated, grayish-pink tumors which frequently may be cystic. Although they are often encapsulated, they may be locally invasive to such an extent as to be technically inoperable. Histologically these tumors may take several forms. There may be a predominance of epithelial elements or of thymocytic elements or there may be a mixture of the two. Another type resembles Hodgkin's disease and has been

referred to as a granulomatous tumor of the thymus.

Histologically no differences can be noted between thymomas that are easily removable and those that are infiltrative. Although these tumors rarely metastasize outside the thorax, they may cause death by local invasion of tissues within the thorax. They should, of course, be removed surgically when possible and treated with roentgen rays if inoperable. Delaney [17] has reviewed the cases of thymoma encountered during a recent five-year period at the clinic. Pertinent aspects of these cases and those reported previously by Seybold and associates [18] are summarized in Table 4.

The association between the thymus gland and myasthenia gravis is not clearly defined as yet. About 16 per cent of patients with myasthenia gravis are found to have a thymic tumor, while nearly two-thirds of the patients with thymomas suffer from myasthenia gravis. Thymectomy, even when a tumor of the thymus is not present, apparently exerts a beneficial effect on the course of the disease in some myasthenic patients. Quite obviously, when a tumor is present, it should be removed surgically regardless of whether or not the patient has myasthenia gravis.

Another unsolved riddle of the thymoma problem is the association of benign thymic tumor and agenesis of erythrocytes. This is a rare condition but the relationship appears to be more than a chance one. Although thymectomy has relieved the anemia in at least two cases reported in the literature, this was not so in two cases recently encountered at the clinic.[19]

Thymomas, as previously mentioned, characteristically are located in the anterior mediastinum, and they may be situated high in the thorax or down near the diaphragm. On rare occasions they may be located posteriorly, or they may even be found within the parenchyma of the lung. Calcification can be seen in about 25 per cent of thymomas by careful roentgenologic study.

The surgical approach to thymomas must depend on the location and size of the tumors. In the case of small, anteriorly placed thymomas, a median sternotomy incision is exceedingly useful. When a large, anterior mediastinal thymoma is present, and particularly one presenting laterally, a posterolateral approach may be better. This incision gives superior exposure and flexibility.

Pericardial Cysts

Thin-walled cysts of the mediastinum filled with a clear fluid and lined with mesothelium are commonly referred to as pericardial cysts. They are located in the midmediastinum, in relation to the pericardium, usually in the inferior portions of the mediastinum. The commonest location is in the cardiophrenic angle of either side, although lesions develop more commonly on the right side than on the left side. Occasionally they may occur at a higher level in the mediastinum.

The constant relationship of these cysts to the pericardium and their frequent location in the cardiophrenic angles suggest an embryologic origin. In the course of development of the pericardium there are found two ventral parietal recesses which end blindly and, under normal circumstances, eventually disappear. These recesses develop at the point where so many pericardial cysts occur. Occasionally there will be a communication between a cyst and the pericardium. The conclusion is inescapable that the various cysts and di-

TABLE 4
THYMOMA

Tumor	Myasthenia Gravis		Total
	Present	Absent	
Encapsulated	36	18	54 (62 per cent)
Invasive	17	16	33 (38 per cent)
Total	53 (61 per cent)	34 (39 per cent)	87

verticula of the pericardium must be related embryologically to persistence of the ventral parietal recess.

These lesions are usually found incidentally on thoracic roentgenograms. They rarely give rise to symptoms. A definitive diagnosis can be made only at thoracotomy. Usually, however, the nature of the lesion can be strongly suspected preoperatively. Its location, rounded or elliptical shape, and uniform density are characteristic. Lateral decubital views may help to demonstrate the cystic nature of the lesion by alteration in the contour of the tumor.

Surgical removal of the lesion is indicated primarily to confirm the diagnosis, since the lesion itself is quite innocuous.

Intrathoracic Goiter

Intrathoracic goiters account for approximately 5 per cent of all mediastinal cysts and neoplasms. Such a lesion can be defined as a goiter in which the whole mass, or the major portion of it, lies within the confines of the thorax.

Grossly, intrathoracic goiters have an appearance much like that of adenomatous goiters in the neck. The blood supply usually comes from the cervical region. In addition, the lesions are frequently covered by a plexus of small veins, just as is the same lesion in the neck. Histologically, they usually are typically benign thyroid adenomas, although occasionally histologic evidence of a malignant lesion is encountered.

They are located most commonly in the anterior portion of the superior mediastinum. It has recently been emphasized that a certain proportion of intrathoracic goiters actually may be situated in the posterior mediastinum, bounded anteriorly by the superior vena cava, posteriorly by the thoracic vertebrae and inferiorly by the azygos vein.[20]

The diagnosis of an intrathoracic thyroid gland is not always easy. Certain clinical features are, however, of considerable value. A patient with a palpable goiter in the neck, or one who previously has undergone thyroidectomy and whose thoracic roentgenogram shows a superior mediastinal mass which moves on swallowing and contains calcium, should be suspected of having an intrathoracic goiter. Occasionally, patients will be encountered who have an intrathoracic goiter but in whom no thyroid gland is palpable in the neck and who have not undergone thyroidectomy. Reference has already been made to the use of I^{131} as a tracer substance in diagnosis. Certain intrathoracic goiters will pick up traces of this isotope in sufficient quantity to allow their identification as such.

These lesions, of course, should be removed. They tend to enlarge, and may encroach on neighboring vital structures. They may become hyperactive and, of course, malignant disease is an ever-present threat.

There are several surgical approaches to these lesions. When there is a sizable cervical component to the lesion, a cervical collar incision usually suffices for adequate removal. If the thoracic component is large and anteriorly placed, the exposure may be facilitated by adding a sternum-splitting incision to the collar incision. In the absence of any cervical component to the lesion, or when thyroidectomy has been performed previously, a posterolateral incision is preferable, particularly if the lesion is posteriorly placed.

Summary

The recognition and surgical management of primary tumors of the mediastinum remain problems of concern to physicians interested in thoracic diseases. Proper distinction between primary mediastinal cysts and neoplasms and other intrathoracic lesions can usually be made by a thorough roentgenographic survey of the thorax. The use of fluoroscopy, aortography, angiocardiography, scalene node biopsy and I^{131} in a tracer dose occasionally may be required for additional diagnostic information.

Neurogenic tumors are the commonest mediastinal tumors and account for approximately a third of all lesions seen in a large series of cases. Teratomatous tu-

mors make up about 20 per cent of the total group, while enterogenous cysts and thymomas occur next in frequency. Less common lesions are pericardial cysts, undifferentiated malignant neoplasms and intrathoracic goiter. Approximately 14 per cent of mediastinal tumors are malignant, although the incidence is slightly higher when only children are considered.

Surgical removal is the treatment of choice for all mediastinal tumors, not only for accurate identification of the nature of the lesion but also for prevention of the complications of continued growth and, when the tumor is malignant, of local and distant spread.

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Tetanus in 1848

During the last two or three weeks, the deaths from tetanus and trismus have greatly increased, and we hear of these diseases in almost every part of the city and in the hospitals, both private and public. The slightest wound, especially in the foot or hand is likely to be followed by tetanic symptoms. This is not the place to speak of this formidable and usually intractable disease; but we may remark that chloroform will relieve if it does not check those violent clonic and tonic spasms, which so speedily exhaust the poor patients; we speak advisedly on this point, and recommend it to the profession, as at least useful in checking the more violent symptoms of the disease, until the usual remedies can be brought to bear on the case.

New Orleans M. & S. J.: 5:398 (August) 1848.

The Use of Anticoagulant Drugs in Atherosclerotic Coronary Artery Disease*

• The author discusses the problem of indications and contraindications for the use of the anticoagulants and the wide divergence of opinion on the subject.

CARL J. DICHARRY, M. D.†
New Orleans

THE object of this paper is to discuss some of the controversial points surrounding the use of anticoagulant drugs in the prevention and treatment of complications of coronary atherosclerosis and to discuss the clinical use of these drugs. The controversy surrounding their use is primarily statistical and with the extensive work being done in determining the cause of atherosclerosis, the physiochemical forces predisposing to thrombosis, and the effect of lytic agents on fresh thrombi, this statistical controversy may well extend beyond the clinical usefulness of these drugs. There is, however, a growing tendency to accept their use in some, if not all, cases of coronary thrombosis or impending thrombosis.

If the process of coronary occlusion were one of an atherosclerotic lesion with a superimposed thrombus, then anticoagulant therapy would be more universally acceptable. However, Paterson [1] has shown that intimal hemorrhage can be demonstrated at the site of precipitation of a coronary thrombus in 89 per cent of the autopsy cases. Therefore, if hemorrhage occurring into an atherosclerotic plaque were the primary lesion, then certainly the addition of drugs which might increase bleeding at this site would seem contraindicated. Paterson showed by serial sections that these intimal hemorrhages in the coronary arteries are due to rupture of capillaries derived from the lumen of coronary arteries. These capillaries are not related to the vasa vasorum although they do anastomose with these structures in some cases. These intimal capillaries are not normal structures; they are found only in sclerotic arteries, and they apparently develop in response to the demand for nutrition by atherosclerotic plaques in which they ramify. Paterson feels that the sequence of events may well be a basic atherosclerotic lesion, hemorrhage into this lesion from these abnormal intimal capillaries, liberation of thromboplastic substances, and finally intraluminal thrombosis. He states that in 13 per cent of a series of cases of coronary occlusion studied by serial section of the coronary arteries, hemorrhage into atherosclerotic plaques had attained such a size that the coronary lumen was obstructed by pressure alone and sudden death from coronary insufficiency resulted. If 13 per cent of the coronary occlusions are due solely to intimal hemorrhage and pressure occlusion of the coronary lumen, then the risk of additional hemorrhage by the use of anticoagulant drugs would be too great.

Barker [2] of the Mayo Clinic has presented evidence which indicates that although atherosclerosis is the basic disease, final arterial occlusion by thrombosis is responsible for 80 per cent of the transmural myocardial infarctions and that thrombosis develops as a result of one or more of the following factors: Endothelial disease or injury, relative stasis or impairment of regional blood flow, and increased coagulability of blood. He further states that one well con-

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† Department of Medicine, Mahorner Clinic, New Orleans 13, Louisiana.

trolled study of experimental thrombosis in the arteries of animals indicated that lysis of thrombi and restoration of the lumen of the arteries was much more rapid and more nearly complete when anticoagulants were given soon after the thrombi were produced than when they were not so given.

Theoretically then, there are at least three mechanisms of death which are preventable by means of anticoagulants: The extension of existing thrombi, the development of new thrombi at other sites, and the formation of a mural thrombus over the infarcted area on the inside of the heart with the subsequent production of embolic accidents. The consensus of opinion is: (1) Subintimal hemorrhages are relatively common. (2) The 13 per cent of coronary occlusion caused by intimal hemorrhage alone in Paterson's group of cases is much higher than the incidence reported by most investigators. (3) The prevention of thrombus extension or new thrombi effectively reduces the morbidity and the mortality associated with coronary atherosclerosis and, therefore, anticoagulant treatment if safe would be a helpful adjunct in the management of these cases.

Anticoagulants in Acute Myocardial Infarction

Wright [3] first reported the use of Dicumarol in acute myocardial infarction in 1945. The report of the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction, in 1948,[4] increased the enthusiasm in their use.

In this study 368 patients admitted on even days received conventional therapy and constituted the control group. Four hundred and thirty-two patients admitted on the odd days received anticoagulants in addition to conventional therapy and constituted the treated group. Twenty-four per cent of the control patients died; whereas 15 per cent of the treated patients died. The greatest benefit in the reduction of mortality was in the patient 60 years of age and older. Twenty-five per cent of the control patients developed thrombo-embolic complications; whereas only 6 per cent of the treated group developed thrombo - embolic complications while under adequate anticoagulant therapy. Bleeding occurred in 6 per cent of the control and 12 per cent of the treated. Only one case of bleeding was considered severe. It was concluded by the Committee that anticoagulant therapy was safe and should be used in all cases of coronary thrombosis unless a definite contraindication existed.

Parker and Barker [5] of Mayo Clinic reported on 100 treated and 100 control patients. There was no incidence of serious bleeding. There were 37 vascular complications in the 100 control cases and 5 in the treated patients. Fifteen of the untreated patients developed a second myocardial infarction while 2 of the treated developed a second myocardial infarction. Fourteen of the untreated developed pulmonary emboli and only 1 of the treated. There were 8 cerebral vascular occlusions in the untreated cases and 2 in the treated cases. There were 4 cases of peripheral arterial occlusion in the untreated cases and none in the treated.

Nichol [6] treated 207 patients with anticoagulants for myocardial infarction from June, 1943, to June, 1953. The overall rate was 14.3 per cent, however, the author considered the acute stage to last six weeks instead of the four-week interval as used by most authors. Twenty-two autopsies were obtained and rupture of the ventricles was found in only 3 cases, or 1.3 per cent, which is close to the incidence reported where anticoagulants were not used. Nichol obtained, by a questionnaire, further data from 136 physicians who reported that significant hemorrhage occurred in only 2 per cent of 15,500 patients.

Russek [7] divided his cases into "good risk" and "poor risk" patients and found such a low mortality in the "good risk" patients that he does not consider anticoagulant therapy indicated, since the risk outweighs the benefits of anticoagulant therapy. He considers the patients

to be "poor risk" cases when one or more of the following poor prognostic factors is present during the first twenty-four hours of hospitalization. (1) Evidence of a previous myocardial infarction; (2) intractable pain; (3) extreme degrees or persistence of shock: (4) significant enlargement of the heart; (5) gallop rhythm; (6) congestive failure; (7) atrial fibrillation or flutter, ventricular tachycardia or intraventricular block; and (8) diabetic acidosis, marked obesity, previous pulmonary embolism, varicosities of the lower extremities, thrombophlebitis, or other states, predisposing to thrombosis.

De Francisco and Wright [8] reported their experiences with 14 patients who fulfilled Russek's criteria for "good risk" cases in whom a total of 18 certain and 4 probable thrombo - embolic complications ensued. There were 4 major amputations in 3 patients. They concluded that one could not predict with any degree of certainty the probable course of events in an individual who has suffered a myocardial infarction.

Schnur [9] vigorously attacked the statistical validity of the report of the Committe on Anticoagulants and in addition stated that although the Committee recommended that anticoagulant therapy should be used in all cases of coronary thrombosis with myocardial infarction unless a definite contraindication existed, 3 of the responsible investigators on the Committee stated that they did not use anticoagulants routinely in their own practice; 9 followed the recommendations of the Committee, and 1 did not practice clinical medicine.

Autopsy material has also been used to refute the concept of the beneficial effect of anticoagulant therapy. Lee and O'Neal [10] reported findings on autopsy of 174 patients who died of acute myocardial infarctions from 1910 to 1945, which was before the use of anticoagulants, and 326 autopsied patients with acute myocardial infarction subsequent to 1945. Of the 326 patients who were studied subsequent to 1945, 108 had received anticoagulants and 218 had not. The incidence of thrombi was approximately the same in patients with and without the use of anticoagulants. There was no difference between the incidence in those who received adequate therapy and those who received inadequate therapy. However, no thrombi were demonstrated in 28 of the 54 adequately treated patients in whom anticoagulant therapy was started within three days of the clinical onset of myocardial infarction. Myocardial rupture occurred five times more frequently among the anticoagulant treated patients as among the untreated patients in the same period.

Long-Term Anticoagulant Therapy

Following the reports of the beneficial effects of anticoagulant drugs in acute myocardial infarction, investigations were begun to study their effects upon the prevention of recurrent infarction by the long-term use of anticoagulant drugs. The present tendency is to accept the long-term use of anticoagulant drugs following recurrent myocardial infarctions and following severe or complicated initial myocardial infarctions, but there is considerable divergence of opinion regarding their continuous use following mild single infarctions. Keyes, Drake and Smith [11] of Henry Ford Hospital reported their results in patients followed from six months to five years. In the group with a single infarction the death rate was three times greater in the patients who had not received prolonged anticoagulant therapy. In the group with recurrent infarcts, at the end of four years, 62.5 per cent of the untreated were dead versus 12 per cent of those treated with anticoagulants. For the two years prior to 1956 the incidence of bleeding was under 5 per cent.

Suzman, Ruskin and Goldberg [12] have reported on 82 patients receiving anticoagulant therapy continuously for periods ranging from three to seventy-six months, and 88 patients who received anticoagulant therapy only for a period of time limited to the acute phase of the presenting attack or subsequent attacks of myocardial infarction. The mortality rate in the long-term therapy group was

7.3 per cent with 7 recurrences of myocardial infarction; whereas in the short-term anticoagulant group the mortality rate was 33 per cent and there were 24 recurrences.

Separate comparisons were made of the mild and severe cases, and when the mild cases were eliminated the mortality rate in the long-term group (67 patients) was 9 per cent with 7 recurrences of infarction; whereas in the short-term group (60 patients) it was 46.7 per cent with 21 recurrent infarctions. Of the severe cases with a history of previous infarction, the mortality rate in the long-term group (21 cases) was 14.3 per cent compared with 66.6 per cent for the short-term group (15 cases). During the course of the study, cardiac failure occurred with equal frequency in both groups, but the mortality associated with this complication was 11.8 per cent in the long-term group compared with 57.1 per cent in the short-term group. The authors concluded that in patients in whom the presenting attack was mild in addition to being the first one and who received short-term anticoagulant therapy, the outlook was favorable in respect to subsequent infarction, cardiac failure, and death, irrespective of whether or not anticoagulant therapy was continued indefinitely. By contrast, the patients most likely to receive benefit from the long-term anticoagulant therapy were those in whom presenting attacks were severe or there was a history of previous myocardial infarction. As yet, no one knows when long-term therapy should be discontinued.

Coronary Insuficiency with Angina

Studies on the effects of anticoagulants upon coronary insufficiency and angina secondary to atherosclerosis have not been as extensive as the studies in coronary thrombosis and the reports are very conflicting.

Gofman and his co-workers [13] noted unexpected clinical improvement in patients with angina pectoris following the injection of heparin.

Alice Grüner [14] reported results in 24 patients with typical angina pectoris. The patients were treated as outpatients and were given two intravenous injections weekly. During the first two to four weeks placebo injections were given and this was followed by 100 mg. of heparin twice weekly for periods from seven to eleven weeks. Finally placebo injections were again given for three weeks. Fifteen of 27 patients improved during the period of treatment; however, 9 of these improved during placebo injections, whereas only 6 reported improvement during the treatment with heparin. No typical objective changes in the electrocardiogram, blood pressure, or ophthalmoscopic findings could be detected which might suggest a beneficial effect of heparin.

Rinzler [15] evaluated heparin in effort angina by the double blind technique in 18 patients with sclerosis of the coronary arteries and angina of effort. Heparin had no greater effect than a placebo in the control of effort angina. Russek [16] also found no relief of angina by the administration of heparin.

The beneficial effects of Dicumarol long-term therapy in angina pectoris have been reported primarily from the European countries; however, Gabrielsen and his co-workers [17] followed 10 individuals over a period of more than two years and alternated Dicumarol and placebo therapy. The results did not indicate that Dicumarol treatment had a greater effect than placebo treatment in cases of angina pectoris of more than one year's duration.

Anticoagulant Drugs

At the present time two principal types of anticoagulants are in clinical use. These are heparin and the coumarin derivatives and coumarin-like drugs. Heparin acts as an antagonist to thromboplastin from the platelets, and by interaction with the labile factor it interferes with the conversion of prothrombin to thrombin. It also appears to be antithrombic in slowing the rate of interaction of thrombin and fibrinogen. Part of its activity seems to be based on its

high molecular weight and its strong electrical charge. Protamine neutralizes the electrical charge of heparin and counteracts its action. It has the advantage of being rapidly active, its effect being noted in a few minutes if given intravenously. Its disadvantage is that it has to be given parenterally. Because of this disadvantage it is used frequently in the early stages of infarction; however, it is discontinued once one of the oral anticoagulants has produced a therapeutic level. Newer preparations with concentrations of 100 to 200 mg. of heparin per cc. are now marketed and can be used with much less discomfort to the patient.

The coumarin derivatives and coumarin-like drugs decrease the activity of factor VII, and subsequently, the activity of the prothrombin. The activity of other clotting factors, such as plasma thromboplastin component and factor X, decrease during therapy. Dicumarol also decreases the adhesiveness of platelets and reduces platelet agglutinability.[18] The most commonly used drugs of this type are Dicumarol, Tromexan and Coumadin and the phenendione drugs, Danilone, Hedulin and Indon. These phenendione drugs are unrelated to the coumarin derivatives, but their action is similar. There are numerous claims of superiority of one of these derivatives over the others; however, Barker [2] feels that there are few differences between these drugs, and results depend upon the proficiency of the physician in the use of any of them. Therapeutic levels are usually attained when the prothrombin time is two to two and one-half times the control level or approximately twenty to thirty-five seconds. It is usually possible to bring about a therapeutic level within twenty-four to forty-eight hours. These drugs have been given continuously over a period of years in selected patients with good control and results reported. They have the advantage of oral administration; however, daily prothrombins have to be done during the initial phase of their therapy until stability is achieved. Then they must be done once or twice weekly for about six weeks, and if long-term therapy is to be used, prothrombin determination should be done every two weeks. However, monthly determinations are adequate in some cases.

Contraindications to anticoagulant therapy are hypoprothrombinemia due to vitamin K deficiency or severe hepatic disease; renal insufficiency of a marked degree; blood dyscrasias with bleeding tendency; surgery or injuries which leave large, open, raw surfaces; exposure of the brain or spinal cord; ulceration or cancer of the GI or GU tract or other sites at which bleeding may be easily induced; possibly subacute bacterial endocarditis; marked hypertension; and an irresponsible or an incompetent patient. All patients on these drugs should be cautioned about the use of large doses of salicylate while on this therapy since serious bleeding can be produced.

The anticoagulant effect of heparin can be abolished by the administration of protamine, 1 to 4 mg. per kilogram of body weight, intravenously, or fresh blood, and the action of the coumarin or coumarin-like drugs can be counteracted by fresh blood transfusion and by the administration of vitamin K or vitamin K_1 intravenously. Vitamin K_1 is more effective and is usually given in doses of 50 to 100 mg. intravenously. If vitamin K or K_1 is used the anticoagulant effect of the Dicumarol-like drugs is lost. However, there is no evidence that hypercoagulability is produced.[2] It is obvious from the foregoing that there is a wide divergenec of opinion as far as the use of these drugs is concerned; however, the present tendency is to use anticoagulant drugs in the poor risk, if not all patients, with myocardial infarction and in selected cases of so-called "impending infarction." They are of doubtful value in cases of angina.

The Use of Anticoagulant Drugs

If anticoagulants are to be used, it is best to use them early in the course of an infarction. Therapy is frequently begun with heparin either subcutaneously,

intramuscularly, or intravenously. The heparin dosage will vary between 50 to 100 mg. subcutaneously every six hours, and coagulation time done by the Lee-White technique should be done prior to each dose. As a general rule, the coagulation time should be kept within the range of two to three times normal. A number of investigators feel that anticoagulant effect can be obtained by 50 mg. subcutaneously every six hours and that with this dosage it is unnecessary to do coagulation times. Once it has been determined that the patient's prothrombin time is within normal limits and that there are no contraindications to coumarin or phenendione drugs, one of these may be started. These drugs are given orally; however, Coumadin (Wafarin) may be given intravenously or orally. It takes approximately twenty-four to forty-eight hours to get the prathrombin time within a therapeutic range, and heparin administration should be continued until this point is reached. Frequently, particularly in the severely ill patients, heparin therapy is continued over a much longer period of time, often up to two or three weeks, because, first, it is easier to control its effects; and secondly, there is good evidence to indicate that heparin through physiochemical mechanism may have certain advantages over the coumarin derivatives. For example, it acts as a lipemic clearing factor, prevents sludge formation and slowing down of the circulation about the area of infarction, and may have an action on the blood vessels themselves. Long-term use of heparin has been used in coronary artery disease and also in cerebral vascular disease with reported good success.

If one of the coumarin derivatives or coumarin-like drugs are used, the patient should be instructed to watch closely for any evidence of bleeding and should be instructed to have some vitamin K on hand. He should also be instructed to carry identification on his person indicating that he is on anticoagulant drugs and that in case of severe injury, vitamin K_1 or fresh blood transfusion should be administered immediately.

Conclusion

Anticoagulants may be used safely; however, adequate laboratory facilities must be available. Present evidence seems to indicate a beneficial effect of these drugs in the prevention of complications of coronary atherosclerosis. Each physician must decide whether he chooses to use anticoaguants in no cases of infarction, in the poor risk infarction patients, or in all cases of myocardial infarction. In any event, it is important that we recognize that the use of anticoagulant drugs is an adjunct in the total management of these patients and in no way is meant to replace long-established modes of therapy.

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Cranberry Warnings Cause Undue Alarm

The editor of the Journal of the American Medical Association reported that the government's recent pronouncements, reflecting certain scientific data and law pertaining to cranberries, charcoal and chickens, have caused undue alarm among the American people.

In an editorial, entitled "Cranberries, Charcoal and Chickens," Dr. John H. Talbott said that "if turnips and cabbage were included among the vegetables served or mustard was used as a condiment, minute quantities of aminotriazole might have been ingested by the Pilgrims more than 300 years ago."

Aminotriazole was the dangerous, cancer-causing herbicide which caused the government to impound the nation's cranberry supply shortly before Thanksgiving.

"The analyses, began in 1956, were sufficiently satisfactory in detecting residues of aminotriazole that the United States Department of Agriculture reported this compound suitable for use on cranberries," the editorial said, adding: "Eighteen months later, early in November of last year, the implication of this compound as a carcinogen prompted withdrawal of all batched cranberries and cranberry products from the open market."

"Little stress," the editorial continued, "was placed on the well-documented evidence that aminotriazole occurs naturally in vegetables, notably cabbage, turnips and broccoli, as well as in mustard or that the antithyroid action is described in current text books of therapy."

Continuing, the editorial said:

"Charcoal—carbon black—came under scrutiny on November 20, 1959. Since few persons are addicted to the eating of licorice or black jelly beans, there was considerably less space devoted in the newspapers to the suspicion cast on carbon black that had been afforded cranberries. Chronologically, it was recorded in the Federal Registry of December 9, 1958, that carbon black was a permissible food adulterant.

"Chickens (iatrogenic capons) were under suspicion for only a few days last month. However, neither poultry producers, manufacturing chemists, nor the chickens themselves had violated any federal regulation. Approximately 1% of the chickens eaten in the United States have been given stilbestrol as a fattening hormone. Recent improved tests revealed that residues of the drug remained in the skin, liver, and kidneys. After this disclosure immediate steps were taken to withdraw the caponettes from commerce and to suspend the sale of stilbestrol to the chicken growers.

"When next fall rolls around, we hope that cranberries will be permitted for the festive dinners, that licorice and jelly beans will be for sale at the candy counter, and that southern fried chicken will be a permissible menu item."

Current Status of Operations For Occlusive Disease of Peripheral Arteries*

• This article is not only a review of the literature but a comparison of the cumulative results for the various direct surgical procedures for occlusive vascular disease.

CHARLES D. KNIGHT, M. D. †
Shreveport

AMONG the remarkable advances made in the field of vascular surgery during the past ten years are those operations directed toward the problem of arteriosclerosis. While these have been utilized for arteriosclerotic occlusion in many sites, we are primarily concerned today with those technics which deal with chronic occlusive disease of arteries distal to the inguinal ligaments, or the femoropopliteal obstructions.

Operations currently available for treatment of peripheral occlusive disease include: (1) thromboendarterectomy, (2) bypass of the occluded artery by graft, (3) replacement of the occluded arterial segment with graft, and (4) lumbar sympathectomy. All of these procedures have had fairly extensive clinical trial and yet a review of the voluminous reports pertaining to them reveals considerable confusion as to the place and efficacy of each in the management of this problem.

The purpose of this paper is to evaluate the first three of these procedures in terms of their advantages, disadvantages, early and late results, and to ascertain their status in our therapeutic armamentarium at the present time.

Selection of Patients

An important part of the evaluation of surgical procedures of this type is a consideration of the selection of patients on whom they will be used. Once a diagnosis of occlusive arterial disease is made, a number of factors influence the decision as to whether a direct surgical procedure is indicated. Some of these are listed in Table 1.

TABLE 1
FACTORS WHICH INFLUENCE SELECTION OF PATIENTS FOR DIRECT ARTERIAL SURGERY

I. EXTENT OF OCCLUSIVE DISEASE
  A. Status of inflow
  B. Status of outflow tract
II. CLINICAL FINDINGS
  A. Age
  B. Symptoms
    1. Claudication
  C. Symptoms and signs of marked ischemia
    1. Rest pain
    2. Cutaneous ulceration, necrosis, or gangrene
III. ASSOCIATED DISEASES
  A. Diabetes
  B. Other manifestations of arteriosclerosis

The extent of the occlusive disease is the most important consideration in determining suitability for a direct surgical approach to the problem. It is agreed that a patient with segmental or localized disease is the best candidate for this type of procedure, yet patients with more extensive disease may also benefit. The two subdivisions under this category are of paramount importance in patient selection. The significance of an adequate flow of blood in the vessels above the obstructed segment is appreciated but its importance has not been emphasized. This factor may be seen in patients with femoral obstruction who also have aortoiliac disease which

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† Department of Surgery, Highland Clinic, Shreveport, Louisiana.

impedes the flow of blood reaching the femoral vessel. Femoral procedures under these circumstances are apt to be disastrous. Creech and his associates [12] have pointed out that late failures following operations are often due to inadequate "run in". The importance of an adequate outflow tract below the obstruction also cannot be overemphasized. The most important prerequisite to a successful result is a patent artery distal to the obstruction which is of sufficient size to allow successful grafting or reconstruction. This is the "sine qua non" of operative criteria and direct procedures are contraindicated if patent distal vessels are absent.

The status of the outflow tract is usually best determined by arteriography and numerous papers [16, 24, 28, 31, 43, 48] have discussed technics, hazards and interpretation. It is well to remember that arteriography is not infallible, especially if there is failure to visualize any distal vessels. It may be advisable in some patients who appear clinically to be favorable candidates, to explore the popliteal artery or to perform distal operative arteriography to determine the true status of the vessel. Distal arteries can be patent, yet be sufficiently diseased to prevent them from giving good run off and a favorable result. The percentage of patients with occlusive arterial disease who have a favorable patent distal arterial tree varies with reports. DeBakey and associates [14] report a patent distal artery in 90 per cent of their patients with occlusive disease who had good circulation at rest and 50 per cent in patients with advanced arterial insufficiency. Wylie and Goldman [48] reported 61 per cent of 199 patients with femoropopliteal occlusion, inoperable by arteriography. Rob [35] reports only 25 per cent of patients with femoropopliteal thrombosis are suitable for reconstruction.

Once the presence of good arterial inflow and a good outflow tract is established, other factors may be considered in patient selection. Age of the patient could be an important determinant but we are concerned primarily with physiologic age and not chronologic age. It is generally agreed that younger patients are better surgical candidates because they are less likely to have diffuse arteriosclerosis. Also many surgeons believe that the prognosis of patients over 65 years is poor because of the likelihood of extensive disease of their small vessels. The consensus seems to be that age in itself is not a contraindication to direct surgery. Surgical series include successful cases up to 84 years of age. One series [14] had 76 per cent of patients over 50 years and many good results over 65 years of age.

The most significant and specific symptom in occlusive arterial disease is intermittent claudication. The patient with segmental occlusion who complains only of claudication might seem to be the ideal candidate for surgery. Yet, most surgeons now agree that the presence of claudication in association with segmental occlusion is not enough in itself to warrant surgical intervention. The severity of the claudication should be the determining factor. Claudication should be incapacitating before it becomes a surgical indication. Cooley [9] picks 200 yards as the distance below which, if severe claudication develops, surgery is indicated. Estes [22] states that patients able to walk two or more blocks without claudication rarely elect operation while those who can walk less usually prefer surgery. A patient's occupation which requires considerable walking influences both the patient and physician toward surgical treatment. The status of progression of the patient's disease as determined by the history of the claudication should be another determining factor. It has been pointed out that all patients are not incapacitated by claudication and that one may have this symptom for years without progression of the disease.[11] If the symptoms are progressive, more aggressive therapy is indicated.

Another question that arises in selecting patients for surgical treatment is which patients with far-advanced disease, whose signs and symptoms are those of severe ischemia, should have attempts at reconstruction or bypass procedures.

Many authors [4, 5, 11, 19] have recorded their pessimism with this group of patients. Cannon [5] recently stated that the presence of actual ischemic lesions in the toes or feet is practically pathognomonic of involvement of the distal tree and operative intervention is rarely indicated. He also stated [6] that if a patient has rest pain and or gangrene in the foot, amputation is probably the best treatment. Wylie states that no more than 10 per cent of patients with rest pain or gangrene have operable lesions. Although chance for success in this group is diminished, the current practice seems to be to advise and perform surgical procedures if a satisfactory distal arterial bed is present. Most surgeons are willing to risk the increasing number of poor results in this group because the alternative is amputation of the limb. Roberts and Hoffman [36] and LeFevre and associates [27] have shown what may be accomplished by judicious selection of operative candidates with marked ischemia. One is tempted to stretch the indications in this group to those patients with poor outflow because there is little else to offer. The miserable experience of Cannon and his associates [8] with this group of patients shows that operation has nothing to offer if distal vessels are occluded.

The importance of associated diseases in these patients as possible deterrents to direct surgery is controversial. The role of diabetes in patient selection is rather indefinite. There is agreement that arteriosclerosis is usually more generalized in the diabetic patient and that changes are most noticeable in smaller vessels, particularly those of the calf.[15, 26] The fact that patients with occlusive disease and diabetes have poorer survival rates than those without diabetes is also well known.[11, 22] Most reports indicate that the more extensive disease in diabetes makes them poor subjects for direct arterial surgery, and Humphries and his associates [26] have abandoned grafting procedures in diabetics who complain only of claudication. The consensus seems to be that while diabetics are not good candidates for this type of surgical treatment, the most important factor is still an adequate distal arterial segment. In carefully selected cases good results have been obtained in diabetics.[14, 15]

The presence of manifestations of arteriosclerosis involving coronary or cerebral vessels requires careful evaluation in each patient who is a surgical candidate for peripheral occlusive disease. The frequency of associated cardiovascular disease was high in one series [14] where 47 per cent had hypertension and 35 per cent had heart disease. The influence of associated disease is reflected in results reported by Cannon and associates [8] where 37 per cent of their patients with thromboendarterectomy developed major arteriosclerotic complications, 16 per cent of which were fatal myocardial infarction. Wylie and Goldman [48] reported that of their patients with operable femoral occlusion, 47 per cent developed crippling or fatal manifestations of arteriosclerosis at other sites within five years of their initial operation. It has been suggested that such a high frequency of complications due to arteriosclerosis of the cerebral and coronary vessels casts doubt on the wisdom of elective surgery in peripheral arteriosclerosis. DeBakey and his associates,[14] however, do not believe that this factor is important in patient selection and others [26] have urged that this not be a deterring factor. The literature seems to support the contention that each case deserves careful evaluation as to prognosis and life expectancy on the basis of coexisting arteriosclerosis other than that in the extremity.

On the basis of these considerations, the following maxims can be stated in regard to patient selection for direct surgery for arteriosclerosis.

1. The most important single finding for successful treatment is a patent distal arterial tree, and the more normal it is, the better is the chance for a good result from surgery.

2. If intermittent claudication is the chief indication for surgery, it should be disabling and or progressive. It should be

severe enough to warrant the risk and morbidity of surgery.

3. In patients with severe arterial insufficiency or advanced ischemia, especially when conservative treatment is a failure, additional risk of a direct surgical procedure is justified because the alternative is amputation. Such treatment is not justified if a distal patent segment is absent.

4. Advanced age, diabetes, and manifestations of arteriosclerosis involving coronary and or cerebral arteries are relative deterrents of varying degrees to direct arterial surgery.

Procedures

There are three surgical procedures which constitute the direct approach to chronic occlusive disease of peripheral arteries. All have had rather extensive clinical trial and are worthy of consideration.

Thromboendarterectomy (Endarterectomy or Thrombointimectomy): This is the procedure by which the occlusion is removed and the artery is reconstructed without use of grafts or synthetic materials. This method depends on the development of a cleavage plane between the atheromatous plaques and the outer portion of the vessel wall. This plane is usually between the intima and media or within the media itself. Early methods of endarterectomy as proposed by Dos Santos were abandoned because of poor results and later the procedure was reintroduced by Wylie [46] for use in the abdominal aorta and iliac arteries. Its use in femoropopliteal obstructions has been championed by Cannon and Barker [7] and the technical details of the procedure are outlined in articles by them [7, 8] and others.[33, 37, 44, 46] These details will not be reviewed here but attention should be called to the fact that early failures were thought to be due to long arteriotomy incisions and these in addition to the long skin incision and tedious dissection prevented this procedure from enjoying popularity. More recently, the innovation of internal stripping by semiclosed methods [7] utilizing multiple short arteriotomy incisions has improved both the technic and, seemingly, the results.

Advantages which have been attributed to thromboendarterectomy include: (1) elimination or diminution of needs for arterial grafts or replacements; (2) leaving of a vessel or conduit of autogenous material; (3) avoiding the problem of kinking, twisting or proper tension of a graft; and (4) the possibility of opening branches within the occluded vessel segment when the atheromatous core is removed. Disadvantages include: (1) a remaining vessel which is thin and may be prone to aneurysmal dilatation; (2) inability to adapt the procedure to some obstructions because of the character of the vessel wall; (3) the problem of management of the intima at the lower end of the dissection; (4) the likelihood of early thrombosis from long arteriotomy incisions or roughened vessel walls; (5) extensive dissection which is usually long and tedious and may destroy collaterals; and (6) the possibility of making the extremity worse if operation fails to restore vessel patency or postoperative thrombosis occurs.

Grafting Procedures: The other two direct procedures employed in surgical treatment for chronic occlusive vascular disease require the utilization of some type of vascular replacement or graft. It is not within the scope of this paper to discuss the advantages and disadvantages of various types of vascular grafts. Suffice it to say that three groups of grafts have been used extensively and these are arterial homografts, venous autografts and synthetic prostheses. Arterial homografts have been largely discarded from use in the lower extremities because of limited availability and a high late failure rate due to atherosclerotic changes and aneurysmal dilatation.[28] After an earlier discouraging trial, venous autografts have again gained popularity in some quarters.[2, 13, 28, 29, 39] There is some evidence that they are less likely to develop late difficulties than other grafts.[28] Many prosthetic grafts have been used but teflon and dacron have generally replaced

others in current use. These are probably the most widely used grafts today because of easy availability and reported early results which were encouraging. These are considered by many to be the best available grafts for replacement of the terminal aorta.

Once the type of graft is selected, it can be used either as replacement for, or as a bypass of, the occluded vessel. **Bypass grafts** are those which are inserted by an end-to-end technic above and below the obstructed arterial segment. It is generally agreed that regardless of the length or site of obstruction, the proximal anastamosis should be in the region of the common femoral artery or above. Those who are interested in the technical details of this procedure are referred to the works of DeBakey and his associates,[14] Edwards,[19] Deterling [15] and others [37, 43] who have amassed considerable experience with its use.

Advantages cited for this procedure by its proponents include: (1) relatively short operative procedure with short incisions and minimal dissection, regardless of the length of obstruction treated; (2) preservation of collateral vessels so patient is no worse if procedure fails immediately; (3) utilization of end-to-side anastomoses which are larger in circumference than others and thus tend to decrease incidence of thrombosis; (4) the leaving of intact vessels which may carry some blood; and (5) the applicability of the procedure in some patients where thromboendarterectomy is impractical. Disadvantages of this procedure are as follows: (1) the use of a foreign material as graft with its inherent disadvantages; (2) the failure to remove the atheromatous material which may allow its encroachment on the anastomosis and lead to early failure; (3) the small range of technical error consistent with successful function; and (4) the possibility of making the extremity worse if late failure of the graft occurs (due to failure of collaterals which have closed).

Some surgeons prefer to remove or excise the occluded segment of artery and replace it with a graft. Others prefer similar grafts but only exclude the obstructed segment, rather than remove it. All these procedures we will group in the category of **Replacement Grafts** for purpose of discussion. The separation of this group from other grafting procedures may be a somewhat artifical one since some surgeons excise and replace short occluded segments while they bypass longer ones and group all the procedures as grafting procedures. The technic for replacement grafting differs from bypass procedures in that a more extensive dissection is required in order to remove the obstructed segment and this, of necessity, destroys numerous collaterals. Also the anastamoses with this type of graft are usually end-to-end. Humphries and his associates [26] have emphasized the importance of replacing long straight arteries in their entirety and not just the diseased segment. They believe that some of the poor results with this procedure are due to limited replacement of short diseased segments.

Wide use of replacement grafts has been reported by numerous authors and the advantages cited include: (1) use of end-to-end vascular anastamoses which are thought by some to be more physiologic; (2) unlikely possibility of progression of disease to occlude anastamoses since entire involved area is excised or excluded; (3) avoidance of long incisions and extensive dissection by excluding long diseased segment and leaving them in place. Disadvantages which have been attributed to these procedures are: (1) those inherent in various types of grafts; (2) the extensive dissection required to excise the entire diseased artery with destruction of collaterals; (3) greater likelihood of thrombosis in end-to-end anastomoses of peripheral vessels because of their small size; and (4) the likelihood that the extremity will be worse than before surgery if graft failure occurs.

Results

To ascertain the effectiveness of these various procedures, reported results have been reviewed for evaluation. This has

been like tabulating election results about thirty minutes after the polls close. The reports are at best fragmentary, inconclusive, and in many instances not comparable, one with another. Nevertheless, they provide the only concrete evidence on which to judge the effectiveness of the procedures.

Table 2 is a tabulation of some of the most recent reported results of thromboendarterectomy for femoropopliteal occlusions. Note that the total number of cases is relatively small and the chance for an immediately successful result (patent peripheral pulses) has ranged from 53 to 90 per cent with an average of 71 per cent. Late results in patients followed about one year, showed patent pulses in 53 to 73 per cent with an average of approximately 65 per cent. Cannon and associates [8] have reported a number of patients who have been followed for a longer period and their most recent report showed that 66 per cent of them had fair to excellent improvement up to 63 months after operation. They also reported an operative mortality of 2.2 per cent for thromboendarterectomy and an amputation rate of 13 per cent. The most encouraging recent report is that of Wylie [47] who states that during the past three years, utilizing the internal stripping method and better case selection, thromboendarterectomy has been almost as satisfactory for femoral lesions as it has been for aortoiliac disease. He further states the immediate thrombosis rate following endarterectomy at all sites has dropped to less than 3 per cent and that of 165 patients with successful operation, only 2 developed late occlusion. This latter group was followed an average period of four years.

Tables 3 and 4 show the recent results reported for procedure utilizing bypass grafts. The first seven series in which the arterial homograft was used reported immediate success in 83 per cent of cases (range 73 to 92 per cent), and a late success rate which averaged 57 per cent (range 39 to 80 per cent). These cases were followed up to thirty-eight months. The next nine series used various prosthetic grafts for bypass. Immediate successful results were noted in approximately 83 per cent of cases (range 60 to 89 per cent) which when followed up to three years, were reduced to 68 per cent (range 17 to 84 per cent) of the total.

Although a number of reports favor venous autograft bypass as the procedure of choice, only one recent detailed report [13] was found and this small series had an immediate success rate of 77 per cent and 58 per cent success in patients followed up to twelve months. Other enthusiastic suporters of venous grafts have commented in regard to superior results obtained but their detailed results were not found during this review. Linton has stated that in his experience no saphenous vein graft which was patent on discharge from the hospital has occluded and the longest follow-up period has been six years. Cooley [10] and his associates have demonstrated the safety of bypass procedures

TABLE 2
RESULTS OF THROMBOENDARTERECTOMY

Source of Material	No. Cases	Immediate Success Per Cent	Late Success Per Cent	Length of Follow-up
Warren [44]	14	85.6	64.3	6 to 14 mo.
Cannon et al [8]	45	71.0	62.0	1 yr.
DeBakey et al [14]	17	53.0		
Freeman and Nicholson [23]	21	90.4	62.0	1 yr.
Warren and Villavicencio [45]	21		55.0	1 yr.
Creech et al [12]	15	73.3	73.3	2 to 18 mo.
Muller [32]	19	52.6	52.6	Up to 1 yr.
Average		70.9	64.9	1 yr.

TABLE 3
RESULTS OF BYPASS PROCEDURES

Source of Material	No. Cases	Type of Graft	Immediate Success Per Cent	Late Success Per Cent	Length of Follow-up
Payne et al [34]	23	Arterial Homograft (A. H.)	74.0		
Deterling [15]	39	A. H.	92.3	80.0	Up to 2 yr.
Luke [30]	56	A. H.	88.0	50.0	Up to 2.5 yr.
DeBakey et al [14]	83	A. H.	85.0	69.9	Up to 38 mo.
Hohf et al [25]	33	A. H.	72.7	39.4	1 to 3 yr.
Linton [28]	38	A. H.		60.0	2 to 3 yr.
Dale et al [13]	37	A. H.	72.9	27.0	Up to 32 mo.
Average			83.0	57.0	Up to 3 yr.

TABLE 4
RESULTS OF BYPASS PROCEDURES

Source of Material	No. Cases	Type of Graft	Immediate Success Per Cent	Late Success Per Cent	Length of Follow-up
Deterling [15]	10	Synthetic Prostheses	60.0	50.0	Up to 1 yr.
Edwards and Lyons [20]	38	Nylon and Teflon	81.5	71.0	Up to 33 mo.
DeBakey et al [14]	110	Nylon	86.0	68.1	Up to 38 mo.
DeBakey et al [14]	137	Dacron	89.0	83.9	Up to 38 mo.
Hohf et al [25]	23	Nylon	73.9	43.5	Up to 2 yr.
Szilagyi et al [42]	50	Dacron	75.0	68.0	18 mo.
Creech et al [12]	26	Nylon	76.9	16.6	9 to 18 mo.
Muller [32]	25	Synthetic Prostheses		68.0	Over 6 mo.
Edwards [18]	All Cases	Nylon and Teflon		50.0	3 yr.
Average			83.3	68.5	Up to 3 yr.
Dale et al [13]	31	Venous Autograft (V. A.)	77.4	58.0	Up to 12 mo.

by reporting an operative mortality of 1.5 per cent.

Table 5 shows results in patients in whom the occluded segments are replaced by vascular grafts. The number of series reported is small because this procedure has become less popular with the increase in popularity for bypass procedures. It should be noted that two of these series contain a number of bypass procedures and might be included in either grafting category. The tabulated series using all graft types had an immediate success rate which averaged 72 per cent (range 50 to 84 per cent) and a late success rate averaging 67 per cent (range 36 to 75 per cent). These patients were followed from eight months to five years. The most encouraging long term results for grafting procedures are those reported by Humphries and associates with 75 per cent success in patients followed four to five years.

Table 6 shows a comparison of the collected results of various procedures reviewed here. It is noteworthy that the immediate success of bypass grafts excels that of the other procedures. With the

TABLE 5
RESULTS OF REPLACEMENT GRAFTS

Source of Material	No. Cases	Type of Graft	Immediate Success Per Cent	Late Success Per Cent	Length of Follow-up
Shaw and Wheelock [38]	22	A. H. & V. A.	72.7	63.7	Up to 8 mo.
Dye et al [17]	30	V. A.	50.0	36.6	2 to 4 yr.
Szilagyi et al [41]	71 *	A. H.	77.5	52.1	Up to 33 mo.
DeBakey et al [14]	19	Synthetic Prostheses	84.0		
Humphries et al [26, 27]	250 †	A. H. and Dacron		75.0	4 to 5 yr.
Average			72.1	66.9	Up to 5 yr.

* Includes 18 bypass grafts.
† Estimate includes indeterminate number of bypass grafts.

TABLE 6
COMPARISON OF RESULTS OF ALL OPERATIONS

Procedure	Immediate Success Per Cent	Late Success Per Cent	Length of Follow-up
Thromboendarterectomy	70.9	64.9	1 yr.
Bypass Grafts	83.0	63.8	Up to 3 yr.
Replacement Grafts	72.1	66.9	Up to 5 yr.

follow-up thus recorded, it is difficult to attach any significance to these late results.

Discussion

A review and comparison of the cumulative results for the various direct surgical procedures for occlusive vascular disease shows no clear superiority of one procedure over another. It seems that greater experience, with a long-term follow-up of each case, is necessary before the true results of these procedures will be known. This review does indicate some trends in the use of these surgical procedures which are worthy of attention.

There is some evidence to support the contention that although bypass grafts give greater early or immediate success, patients with patent pulses following thromboendarterectomy are likely to have better long-term results.[8, 12, 18, 45, 47] This has caused some surgeons [12] who formerly used grafts extensively to relegate them to a place of secondary importance and advocate thromboendarterectomy as the procedure of choice in femoropopliteal occlusion. Others [5, 45, 47] concur in this choice of treatment.

With the continued experience with grafting procedures, replacement grafts have been largely supplanted by bypass grafts. Bypasses utilizing teflon or dacron prostheses continue to be widely used and are the choice of some surgeons [9, 14] as the best of all procedures for occlusive diseases of peripheral arteries. Others [18] who favor endarterectomy for short occlusions favor bypass grafts for patients with more extensive disease. Still other clinicians, discouraged by the long-term results of prosthetic grafts, have revived the interest in venous autograft bypasses and their results are encouraging.[2, 13, 28] Linton [28] and Baffes[1] are among those who believe that this is the best available procedure for femoropopliteal occlusions.

Although additional time and experience are necessary to place these surgical procedures in their proper perspective, it seems that the results from all are definitely inferior to those reported for the same procedures in larger arteries. One also is impressed that the over-all long-term results in femoropopliteal occlusions have been rather disappointing. This is reflected in a diminishing enthusiasm for

the procedures [5, 32, 40] and expressions of increasing conservatism in patient selection. Some surgeons [12, 18, 32] have almost abandoned the procedure for which they originally expressed enthusiasm while others [5, 9, 40] continue to perform the same procedure but have recognized its shortcomings. Few surgeons are able to duplicate either the results or the enthusiasm expressed for the various procedures by DeBakey, Wylie or Humphries.

It has been predicted that improvement in reported results in the near future is more likely to reflect improved patient selection rather than improvement in the procedures themselves. There are indications that the result from this type of surgery will probably not improve materially until some newer type of graft material is obtained which is far superior to available grafts, or more importantly, until some chemical is discovered which will complement the surgical procedure and stop the progression of the disease itself. Whether long-term anticoagulant therapy is of value in preventing thrombosis of the graft or progression of the disease is a moot question but further trial seems indicated.

At the outset, we hoped with this review to ascertain the status of surgical procedures for occlusive vascular disease in peripheral arteries. It seems evident that their exact status is indeterminate at this time due to insufficient cases of the various types which have been followed long enough to allow accurate appraisal of their efficacy. It is hoped that with reports of detailed long-term results that the exact place for use of each of these procedures will become more definite. Unless there is some agreement on classification and nomenclature of this disease, however, which will allow comparable series to be compared, additional experience may only further confuse the problem. This seems a fair assumption when one studies results of sympathectomy in this disease and realizes that we still have not agreed on its exact place in our therapeutic armamentarium.

While awaiting the final answer as to which of the direct surgical procedures offers the most to patients with femoropopliteal occlusions, results of this form of treatment seem to clearly indicate that a continuation of these surgical procedures in certain patients is worthwhile. Patients should be selected carefully and those who appear to have segmental occlusions, who are either incapacitated or in danger of losing their extremity, should be operated on. The best choice of procedure seems to lie between endarterectomy and bypass graft and the surgeon should use the one which in his own experience gives the best results.

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Cholera

Reported by E. D. Fenner, M.D., New Orleans.

I deem a disquisition upon epidemic cholera altogether unnecessary at this time, since so much has been written on the subject; * * * I may be permitted to premise that the epidemic cholera which made its appearance in New Orleans about the 12th of December last, and raged for about one month, has never since been entirely extinguished. From the last of January to the first of March, the disease ceased to attract attention and the city was filled with visitors; but the weekly mortality from cholera, as reported by the Board of Health, never fell below twenty-four deaths. Early in the month of March, the weather having become quite warm, cholera began to increase rapidly, and soon became what I should call a well marked Epidemic. The deaths from it during the week ending the 26th of March having reached two hundred and eighty-five! being more than two thirds of the entire mortality. From that time, it gradually abated again, and at this time, (April 13th) but few cases are seen.

Bagassosis -- A Medical Enigma

• Few cases of bagassosis have been reported in the world literature, yet it constitutes an industrial hazard of more widespread incidence than has been recognized.

HOWARD A. BUECHNER, M. D.*
New Orleans

ALTHOUGH more than twenty years have elapsed since the relationship between exposure to bagasse dust and a resulting respiratory illness was first recognized by Blitz and Monte (in 1937),[1-2] many features of the pulmonary disorder, now known as bagassosis, continue to constitute a medical enigma.

Very little more is presently known about this disease than was learned during the first few years after its recognition, and many important questions pertaining to its etiology, pathology, geographical distribution, sequelae and physiology remain unanswered.

Etiology

The exact etiology of bagassosis is still unknown. Although it is clear that the illness results from exposure to bagasse dust, the precise physiopathological mechanism involved remains obscure. The silica content of bagasse, allergy to the fiber or to contained microorganisms, mechanical obstruction, direct toxic or irritant effect of the material, a foreign body reaction and infection by associated bacteria or fungi have all been incriminated without convincing proof.

Pathology

The pathology of bagassosis is poorly understood. Few diseases are associated with a greater dearth of pathological information. The entire world's literature contains mention of only two necropsies and two needle biopsies of the lung.

One autopsy (Hunter and Perry, 1946)[3] was performed four years after the onset of illness on a patient with somewhat questionable, or at least unusual, bagassosis. A microscopic description is not included, but the gross pathological findings indicate the presence of a variety of well recognized morbid changes including extensive bronchiectasis, purulent tracheobronchitis and bronchiolitis, pulmonary emphysema, marked fibrosis and chronic pleuritis.

The other autopsy report(Sodeman & Pullen, 1943),[4] although again incomplete, contains some histological information, the most notable feature being a description of "spicules" (presumably of bagasse fiber) in the pulmonary tissue.

Foreign body "spicules" were also seen in the two needle biopsies of the lung (Sodeman & Pullen, 1943 and 1944),[4-5] which were carried out in another patient. However, similar objects cannot be found in the lungs of experimental animals exposed to bagasse dust.[6-7]

The picture is further complicated by the fact that illness occurs in rabbits only when unsterilized dust is used and is then usually characterized by a hemorrhagic pneumonitis and bronchiolitis, apparently attributable to aspergillosis. Exposure to sterilized bagasse fiber produces only a relatively innocuous foreign body reaction.[6-7]

Obviously, much more study of the pathology of bagassosis is needed if a clearer understanding of this disease is to be evolved.

* Chief, Medical Service, Veterans Administration Hospital, New Orleans, Louisiana, and Associate Professor of Clinical Medicine, The Tulane University of Louisiana School of Medicine, New Orleans, Louisiana.

From the Medical Service, Veterans Administration Hospital, New Orleans, Louisiana, and the Department of Medicine, The Tulane University of Louisiana School of Medicine, New Orleans, Louisiana.

Geographical Pattern

The geographical pattern of bagassosis is unexplained. In spite of the enigmatic nature of the above problems, the most puzzling and intriguing feature of bagassosis is its geographical distribution. Until as recently as four years ago, all known instances of the disease resulted from contact with bagasse produced in Louisiana. Cases occurring in Missouri,[8] Texas,[9] and England [3, 10, 11] were exposed to Louisiana bagasse which had been shipped to those areas. Thus Louisiana sugar cane was considered to be the exclusive source of the disease; however, in 1955 this concept was shattered with reports of Ganguly and Pal [12] and Singh [13] describing cases in India. It was then recognized that bagassosis must be a potential hazard wherever sugar cane is grown but why the disease has never been reported from other great cane producing areas of the world—such as Cuba, Puerto Rico, the Philippines, Hawaii, Argentina—remains a great mystery.

The author has reason to believe that bagassosis does occur in at least some of these countries, but once again the failure to recognize or to publicize the illness constitutes an equally baffling aspect of the problem.

Perhaps even more puzzling is the apparent distribution of bagassosis in Louisiana. The earliest cases originated in two sugar factories near the town of Raceland, and as far as can be ascertained, bagasse from these same plants has remained the sole source of the disease. All patients with which the author is familiar contracted the illness either in the two indicated sugar factories or in two manufacturing plants (one near Raceland and one near New Orleans) to which they supply bagasse. Why the other, more than 60, sugar factories in Louisiana have never had a case of the disease remains as deep a mystery at the present time as it was twenty years ago [1] — a mystery, sadly enough, which no one has made a concerted effort to solve.

Sequelae

The sequelae of bagassosis are undetermined. Although there is some indication that bagassosis may be the cause of permanent residual pulmonary fibrosis and diminished respiratory reserve,[1, 3, 10-12, 14] once again adequate follow-up studies have never been carried out, and this vital point remains unsettled. As a result, this disorder is not generally [15-16] classified as a pneumoconiosis, and hence as an industrially compensable illness as it might well deserve to be.[11]

The consequent financial injustice to the many workers who have contracted this disease in the course of their occupation is obvious.

Physiological Data

Physiological data pertaining to the serious derangement of the respiratory mechanism by bagassosis is extremely limited. Diminished vital capacity and maximum breathing capacity are commonly encountered and clearly point to a significant impairment of ventilatory function, while elevation of the serum bicarbonate level in some cases appears to indicate the presence of respiratory acidosis due to alveolar hypoventilation. In addition, the author has studied one patient with an apparently mild recurrence of bagassosis who had little or no ventilatory difficulty but who exhibited a definite disturbance of gas exchange at the alveolar capillary level (unpublished data). It is obvious that much more extensive studies of pulmonary function are necessary to elucidate further the physiological defect in this disease and to determine whether or not bagassosis results in permanent functional disability.

Is Incidence an Industrial Hazard?

The recognition of these many unanswered questions makes it difficult to understand why there has been so little medical or industrial interest in an occupational disease which is associated with important manufacturing processes (paper,

wallboard, plastics, etc.) and which produces serious illness [17] and perhaps significant permanent disability. The obvious explanation of this attitude appears to be contained in the commonly held impression that bagassosis is an an extremely rare medical curiosity of little importance, since only 57 cases,[1-2] including 27 from the United States, 17 from England and 13 from India, have been reported in the entire world's literature. An additional 20 cases are referred to but not described in detail.[1-2] In like manner, the scientific literature would also seem to indicate that the incidence of the disorder has been markedly diminished and that it has virtually ceased to exist, in view of the fact that only 5 cases have been reported in America in the past eight years.[1-9]

Unfortunately, both of these impressions are entirely false.

As pointed out in previous reports,[1-2] bagassosis is undoubtedly much more common than the number of reported cases would seem to indicate, since the vast majority of patients suffering from the milder forms of this disorder either recover spontaneously and do not seek medical attention or in many instances receive an erroneous diagnosis such as "upper respiratory infection," "flu," or "pneumonia." In addition, the author has personal knowledge of a considerable number of patients in whom the correct diagnosis has been established but the cases never reported.[1, 2, 14]

Similarly, the impression that the disease is decreasing in incidence appears to be unfounded. The author has personally seen 2 cases during the past year and was informed by one of these patients that a number of his co-workers had experienced similar illnesses after exposure to bagasse dust. In addition, several of the author's colleagues have seen sporadic cases and another, Dr. Joseph K. Bradford of New Orleans, has studied 20 patients with bagassosis during the past five years.[14] Most of these patients "have been seen on several occasions because of recurrent episodes, and at least a dozen of them have had to return within the past eighteen months." All of these cases came from the same plant, and "it is of interest that this resurgence in recent months coincided with a change in manufacturing technique from a so-called wet process back to the use of dried, old bagasse." [14]

In view of these observations, it appears clear that this disorder is not rare and that it continues to represent a significant industrial hazard. It follows then that the veil of mystery which has surrounded bagassosis for so long must be lifted; that industrial apathy and disinterest must be rectified and that medical knowledge and understanding of this disease must be improved. Its resultant elimination as an occupational menace through the cooperative efforts of all concerned will surely be the reward.

Conclusions

In order to accomplish these ends, the author believes that the medical profession as well as official health agencies must take a more active interest in the study, control, and prevention of bagassosis. A committee or council appointed by appropriate medical groups and charged with the responsibility for the full investigation of this disease, in cooperation with the industries concerned, would be highly desirable. If possible, a well equipped medical center should be designated for the thorough evaluation of all patients with bagassosis, this center to enjoy complete freedom to publish all information pertaining to the disease as they see fit. Through these mechanisms, it would appear that a thorough understanding of this disorder could be brought about and that the occupational hazard involved could be permanently, if belatedly, eliminated.

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Addendum

Since this paper was submitted for publication, a small part of the puzzle concerning the geographical distribution of bagassosis has been resolved by the sudden appearance of the disease in Puerto Rico and by the discovery of a report from Italy (Cangini, 1951) describing 5 cases which resulted from contact with sorghum bagasse. A single case reported from Venezuela (Salfelder, 1956) is probably not authentic.

In late May 1959, a new manufacturing plant, which produces paper from bagasse, began operation in Arecibo, Puerto Rico. Almost at once cases of bagassosis began to appear, and by December 1959, approximately eighty workmen had become ill with this disease. The author has recently returned from Puerto Rico, where he was extended the privilege of interviewing some of these patients, reviewing much of the clinical material and investigating the circumstances of their occupational exposure. There can be no doubt as to the authenticity of the majority of these cases.

The Puerto Rican cases appear to be of particular importance, since they not only comprise the largest and most concentrated outbreak in the history of this disorder — more than equaling the combined reported cases of the world—but serve to verify the contention that bagassosis is a potential danger wherever sugar cane is grown and bagasse is utilized. They further belie the idea that bagassosis is a mere medical curiosity and firmly establish this disease as an industrial hazard of considerable and increasing importance.

Historical Notes

Since the commencement of history, never did a single year include within its orbit so many great, yet incomplete events, affecting the civil and social conditions of society, as that of the past year—events that must long influence for good or evil, the vital progression of the world. The Representative Principle is now extensively arrayed against the Monarchical, the Sovereighty of People against the Sovereignty of Kings, and the long established claims of hereditary absolutism. Whatever may be the denoument of this grand drama, it cannot fail to interest the physiologist, as well as the philanthropist, the vital statistician, as well as the statesman. The paleontologist who explores with enthusiasm the fossilized remains of former worlds, and is lost in amazement in contemplating the catastrophes by which entire races of animals and plants have been wholly lost, has for his study, a subject less curious and less interesting than the vital ethnologist of the present era.

New Orleans M. & S. J. 5:686 (May) 1849.

Present Concept and Control of the Staphylococcal Problem*

• Staphylococcal infections are ever present. The problem is basically an epidemiological one, a matter of spread in the hospital and in the community.

ELAINE L. UPDYKE, Sc.D.†
Atlanta, Ga.

The Problem

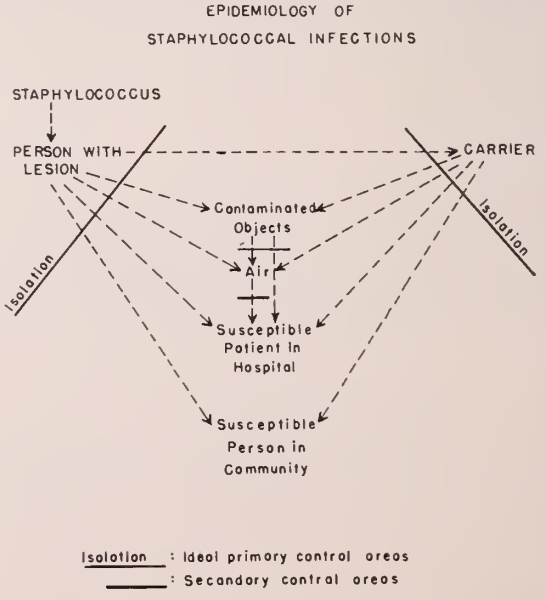
IN a discussion on staphylococcal diseases it is perhaps well to point out first that the problem is not new. Staphylococcal infections have been with us always. Until recent years, however, they were for the most part less obvious, if not less important, since they were often obscured by more serious infections (e.g. streptococcal) which are now controlled by the antibiotics. Furthermore, there are now many more susceptible individuals in our hospital and non-hospital populations, the susceptible individual being, in general, one whose natural defense mechanisms are lowered for one reason or another or are not fully developed. Some of the more common conditions which appear to predispose individuals to staphylococcal disease are:

1. Delivery: hazard to mother and newborn infant.
2. Severe viral infections such as influenza.
3. Diabetes.
4. Cystic fibrosis of pancreas.
5. Surgery: particularly long operations.
6. Lowered specific mechanisms of resistance; e.g. leukemia, agammaglobulinemia; agranulocytosis; irradiation sequelae.
7. Steroid therapy or prolonged heavy antibiotic therapy.
8. Old age.
9. Breaks in skin or mucous membrane such as occur in cut-downs, catheterization, burns, traumatic injuries, etc.

Such individuals compose the majority in whom staphylococcal problems occur whether they are in the hospital or at home. Usually their infections are acquired initially from other individuals, not from staphylococci they carried themselves. Therefore the staphylococcus problem is basically an epidemiologic one, i.e. a problem of spread in the hospital and community.

Epidemiology

A graphic representation of pathways of spread is given in Figure 1. The virulent staphylococcus usually is observed first in a person with a lesion, that person being either patient or ambulatory member of the hospital staff. The person



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* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, May 6, 1959, in New Orleans.

From the Communicable Disease Center, Public Health Service U.S. Department of Health, Education, and Welfare, Chamblee, Georgia.

with a lesion passes the staphylococci to carriers; i.e. apparently healthy individuals who carry the organism in the respiratory tract, on the skin (especially the hands), around the umbilicus (especially in infants), in the feces, and in the perineal region where they apparently actively multiply.

Both the person with a lesion and some carriers contaminate objects such as dressings, ointments, thermometers, and tracheotomy, cystocopic and drainage tubes, etc. All three, i.e. patient with lesion, carrier and contaminated objects, may pass the organism to the air by droplets from the respiratory tract or moist dressings, or dust particles shaken from clothing, laundry and dry dressings.

The susceptible patient in the hospital is therefore exposed to at least four possible sources of infection: (1) Direct contact with patient or personnel with lesion; (2) direct contact with carrier; (3) direct contact with contaminated objects such as inadequately sterilized thermometers; and (4) bacterial laden droplets and dust in the air. The latter are apparently sometimes disseminated through improper engineering of heat conditioning systems, poor planning of laundry chutes and waste disposal systems, and poor housekeeping practices.

Finally both the carrier and the patient discharged from the hospital with a still draining lesion may pass the staphylococci to other members of their household and thence to the community at large.

General Approach to Control

This then is the problem. What is the solution? The solution is simple, really. All that needs to be done is to isolate both the persons with lesions and the carriers. If these two groups of individuals were isolated the primary lines of spread would be broken. (See Figure 1) The solution is simple—but not *easy*. It is not always easy to institute complete isolation of patients with lesions and of personnel with lesions whether porter or surgeon. It is even less easy to isolate carriers because it is necessary first to identify the carriers and then to differentiate the "dangerous" carrier from the casual carrier; since it is unlikely that the above "simple" solution can be made fully effective it is necessary to break the line of spread from other areas as well. Still it is not easy, because of the many possible objects, techniques, and engineering features which may contribute to dissemination of the organisms. However, in spite of the complexity of the problem much can be done to reduce the hazards.

A general approach to control may be outlined as follows:

A. Determining the problem; its existence and extent. This is the responsibility of the Hospital Infections Committee or an epidemiologist.

B. Observing surgical, medical, nursing, and housekeeping techniques.

C. Instituting specific control measures based on findings from the results of the observations, for example, patient isolation, removal from duty of personnel with lesions, improved sterilization of drainage tubes, improvement of housekeeping procedures, etc.

D. Developing an educational program for *all* personnel of the hospital from resident and staff doctors, nurses, administrative personnel, all the way through the hospital to the lowliest of the housekeeping staff.

E. Initiating pertinent bacteriologic surveys.

F. Establishing a surveillance system with an active, alert Hospital Infections Committee.

G. Developing research investigations if personnel, facilities and time permit.

Laboratory

In recent years, bacterial taxonomists have argued over the correct nomenclature for designating these organisms; argued to the confusion of the practicing bacteriologist as well as the physician. As of now the cumbersome term *Micrococcus pyogenes* var. *aureus* has been discarded and the older *Staphylococcus aureus* reinstated. However there is a difference between the new and the old *S.*

aureus. As used now it refers to *any coagulase positive* staphylococcus regardless of pigment production, thus eliminating the older terms "albus" and "citreus".

The importance of hemolysis and pigment production of staphylococci has been questioned for sometime since both are variable characteristics under the usual laboratory conditions. Hemolysis varies with the kind of blood and the base medium used. Pigment production depends on the medium, the age of the culture, the amount of growth (i.e. whether mass or single colony), temperature, etc. Therefore both hemolysis and pigment as commonly determined are poor criteria of the pathogenicity of staphylococcus organisms.

Many properties, toxins and metabolites of staphylococci have been identified and studied some of which are probably related to the virulence of the organisms. However, the laboratory tests for most of them are too difficult and complicated for routine use. Therefore we have come to rely on the coagulase test as a screening tool for identification of potential pathogens. It is in fact a very effective tool for two reasons: (1) Almost all highly pathogenic staphylococci are coagulase positive; and (2) the bacteriophages currently in use are effective almost exclusively on coagulase positive strains. On the other hand, of course, not all coagulase positive are highly pathogenic so it remains only a screening test.

The laboratory has a dual role in assistance with staphylococcal problems. The first role is help to the physician for treatment of the individual patient. This requires only isolation of the organism, a coagulase test and an antibiotic sensitivity test; all relatively simple laboratory procedures. It should be emphasized, however, that the validity of the laboratory results depends to a large degree on the care with which the specimen is taken. Since both coagulase positive and negative staphylococci are ubiquitous, a carelessly taken specimen may yield surface contaminants rather than the causative organism.

The second role of the laboratory in staphylococcus problems is assistance in control of outbreaks. This requires more detailed studies including bacteriophage typing. It should be emphasized that phage typing is a research and epidemiologic tool for assistance in control of outbreaks. In general the typing of sporadic cultures serves no useful purpose and is not recommended. Why does the typing of sporadic cultures serve no useful purpose?

In the first place the phage type, *per se* is not related to the pathogenicity of the staphylococcus organism. Although it is true that the 80/81 and variant strains are now very common in acute hospital problems it is also true that these strains are sometimes present in hospitals without causing serious trouble. Furthermore, and perhaps more important, strains of other phage types do cause trouble. In a recent review on epidemic staphylococci Williams [4] assembled data on published reports of 32 maternity unit outbreaks. The causative organisms of these outbreaks include 13 distinct phage types and several strains identified by other means.

In the second place, typing of sporadic cultures serves no purpose as a guide to therapy since phage type is not directly related to the antibiotic sensitivity pattern of a strain. The sensitivity test remains the most reliable therapeutic guide.

Therefore, phage typing is not recommended as a routine diagnostic tool. This is indeed fortunate since the procedure is too time consuming, the materials are too difficult to obtain, and the technical problems in performance and evaluation are too great for it to be a practicable test for the average hospital laboratory to perform. On the other hand, phage typing is available to most hospitals for epidemiologic control purpose through regional typing laboratories which are usually state health department laboratories. Typing laboratories often accept cultures only if they are definitely related to the control of an outbreak. It is necessary for the laboratory first to have several

cultures from infections in order to define the outbreak. When the "epidemic" strain for a given outbreak has been determined, phage type identification of strains isolated from personnel and environment aids in the epidemiologic evaluation and control of the outbreak.

Not infrequently a hospital is unaware that it has a staphylococcal problem because the active lesions develop only after the patients are discharged. The physician sees such patients in his office and may suspect that the infections are hospital-acquired but may find that the hospital is reluctant to acknowledge any responsibility. If the physician can demonstrate the same phage type from infections in several patients who have recently been discharged from one hospital he has strong suggestive evidence of a single source of infection. With that information he may be able to stimulate hospital investigations which first disclose the problem and then lead to its control. In such situations the phage typing laboratory will be glad to cooperate with the physician by typing "sporadic" cultures.

Acknowledgement is made to Dr. Andre J. Nahmias for access to some of his tabular material.

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2. Communicable Disease Center Training Program: Selected Materials on Staphylococcal Disease, October, 1958. Public Health Service Publication No. 627. U. S. Government Printing Office ($1.25).

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Program Shows Hospitals Can Be Humanized

Hospitals can retain a human approach even though they have grown into one of the nation's largest industries.

A case in point was described by Dr. Howard J. Lockward of Manchester, Conn., in the Jan. 9 Journal of the American Medical Association.

Dr. Lockward said a new program of "progressive patient care" at the 300-bed Manchester Memorial Hospital allows the patient "to retain his individual dignity." The program was begun in 1957 when the hospital began to show signs of "growing pains."

"One of the main charges leveled at modern medicine is that we treat the disease instead of the patient," he said. "Progressive patient care has once again allowed us to go back to the patient as an entity and treat each person according to his medical needs."

"Philosophically, the program is patient-oriented. The patient is the raison d'etre of the hospital, therefore his total needs are considered.

"The doctor-patient relationship is the hub of patient care. All other services such as dietary, nursing, physiotherapy, and diagnostic procedures radiate from this center of activity as the spokes of a wheel."

The degree of illness, or the phase of the disease, is used as the basis for the new program rather than economic status or type of disease.

The Journal of the Louisiana State Medical Society

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The Journal does not hold itself responsible for statements made by any contributor.

Editorial

Possible Shortage of Physicians

A possible or probable shortage of physicians in the next fifteen years is giving concern. It is being considered by executives who have to do with medical education and with public health. Although the number of practicing physicians and medical students is rising slowly each year, the increase in population is proceeding at a faster rate than the anticipated rise in physicians. The reasons for this disproportion are to be found in many fields.

Although the total number of students applying for admission to medical schools is twice the number accepted, the proportion of properly qualified students is decreasing. The cost of tuition and the other items of medical education are increasing. The cost for the four years is now about twelve thousand dollars.

Fifty-two per cent of the students graduating are in debt, and one third have a debt of more than four thousand dollars. Some two thousand American students are seeking medical education in foreign medical schools, and some seven hundred and fifty graduates of foreign medical schools obtain licenses to practice in this country each year. Graduates of American medical schools, for the current year, will be about seven thousand one hundred and thirty-three. To increase this number progressively there would have to be an adequate supply of qualified applicants and of money for greatly expanded teaching facilities.

Since 1948, seventy-eight fully developed four year United States medical schools have spent one billion two hundred and thirty million, seven hundred and seventy four thousand dollars on improved facilities. They still need some three hundred million. If such funds were available and the construction completed by 1965, some eight hundred and fifty additional freshmen medical students could be accepted. New medical schools are built slowly, and at present, this would involve an estimated outlay of about fifty million dollars for each school, half of which would go into construction and equipment.

Funds for this type of expenditure are recruited slowly, either in the form of

taxes or endowment. Both are affected by the tax policy of the federal government, which is distorting values through inflation and drying up the sources of risk capital.

Accordingly, the prospect is that if pressing needs of existing medical schools can be met, there will probably be some eight thousand medical graduates a year in 1965, and these will probably be supplemented by some seven hundred and fifty foreign graduates.

The present ratio of physicians to population is variously calculated at about 132 per 100,000. Without any special social planning, it has been at approximately this proportion for about fifty years. It is estimated that at about 1975 our population will be two hundred and thirty-five million more or less. The ratio of physicians will decline to about 127 per 100,000. To consider this situation, the Surgeon General appointed a consultant group on medical education, consisting of twenty-two individuals experienced in related fields, ten of whom who were physicians and two of these were practicing. This Committee recommends that three thousand six hundred additional graduates be secured in the next fifteen years, which would bring the total per year up to eleven thousand. The majority of this increased number of physicians would have to come from additional medical schools. Increase in the number of students is to be assisted by federal scholarships and the increase in the number of schools by federal grants on a matching basis of about five hundred million, bringing the total up to one billion. This possibly would provide for twenty to twenty-two schools.

The maintenance of the new schools and the existing schools is to be provided by both public and private funds, the definite proportions not stated. Such a program—if matching funds could be secured, and this is doubtful—would provide by 1968 an additional three and a half thousand graduates. Whether these would be drawn from properly qualified applicants is open to question. It would, however, put the federal government directly into the support and ultimate control of medical education, regardless of what promises and plans might be made to the contrary. Any law, or administrative policy agreed upon could be displaced by a newly elected Congress or a freshly packed Supreme Court.

The risk of having the proportion of doctors drop from 132 to 127 per 100,000 does not justify the dangers of this type of federal government expansion. The natural law of supply and demand has been adequate to meet the needs thus far. Expected reduction will be less than five per cent of doctors, which would mean less than 5 per cent reduction of medical service, presumably.

Experience in World War II is a valuable guide. For about three years one third of the practicing physicians were withdrawn from the civilian population. While inconvenience was general, grave and serious injury to the health of the nation was not recognized. Another factor to be considered is that the increase in population is predominantly urban. Ninety-seven per cent of the growth between 1950 and 1955, was in cities of fifty thousand and over. This is just the area where most physicians are already. The ratio of physicians to population in the northeast is 160 to 100,000; in the south, it is 100. The mortality and morbidity is not 60 per cent greater in the south than it is in the northeast. Of eleven southern states, the ratio in Florida is 131, in Louisiana, 112, and in the remaining states varies from 74 to 103. This distribution is not new, and it has generally been attended with rising standards of practice in all areas. It is generally recognized and admitted that medical schools need more money. No general ever complained of having too many troops with which to enter battle. The plea to have the federal government enter the field of medicine to a greater extent than it has done already in the field of research would produce in a short time

a federal medical, all powerful bureau and would ultimately result in state medicine. The risk and prospect of this is unnecessary if the laws applying to demand were allowed to operate as in the past.

Southeastern Surgical Congress

The Southeastern Surgical Congress will hold its Twenty-eighth Annual Assembly in New Orleans, March 21-24, at the Roosevelt Hotel.

The program lists many interesting papers and panel discussions by distinguished surgeons, covering a wide selection of subjects. The material to be offered, although from the surgical standpoint, will be of interest to all.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

THE FORAND BILL

Critical Stage Nears in Forand Battle

According to a recent issue of the **Wall Street Journal,** proponents of the Forand Bill have gained considerable support in Congress to expand the Social Security system to include medical benefits and health care for those receiving Social Security payments. In addition, many Congressmen report they have been flooded with letters, resolutions, telegrams and telephone calls from supporters of the bill. These reports have come from legislators known to be against the bill as well as those favoring it.

The **Wall Street Journal** story also reported that some Southern Democrats and conservative Republicans are now leaning toward Forand-type legislation. With 1960 a presidential election year, these reports have special significance. Historically, Congress has increased and expanded Social Security benefits at election time.

It is believed the House Ways and Means Committee will hold hearings in early March on the entire Social Security system. In view of these alarming developments, the American Medical Association and the Louisiana State Medical Society are making an urgent appeal to all medical societies and individual physicians to make known to their Congressmen our opposition to legislation of this type.

What You Should Do

Every physician should send at least one letter to his Congressman. The letter should:

1. State your opposition to the Forand Bill.
2. Cite the reasons for your position.
3. Point out that care of the aged is a local problem to be met on the state level and that adequate medical care for the aged is provided in Louisiana under existing programs.
4. Request your Congressman to contact members of the House Ways and Means Committee and make known your views.

In addition to writing your Congressman, each doctor should ask as many (at least 10) nonmedical friends as possible to do the same. These letters should come from friends in all walks of life—small businessmen, clergymen, local government officials, bankers, farmers, state legislators, insurance men, and the like.

Your wife can make a tremendous contribution to this campaign by writing her Congressman and soliciting the support of her friends. It is impossible to have too many letters from too many people voicing opposition to the Forand Bill. Both you and your wife should seek resolutions from as many lay groups, civic clubs, and other organizations as possible opposing the Forand Bill.

Begin the Letter Campaign Now

Getting letters off to Congressmen cannot be started too early. Hearings are scheduled for early March and if the letters are to be effective, they should be in Washington by the sackful before the hearings begin. Proponents of the Forand Bill have already begun flooding Washington with letters. The time for your letters is now. Recent revisions of the labor laws

enacted at the last session of Congress should prove to any doubters the effectiveness of letters and the voice of the "people back home." In a showdown fight on a controversial issue, legislators' votes are cast with an ear to the grass roots.

Who and Where to Write

Letters to Congressmen should be addressed to the House Office Building, Washington, D. C. Your Senator's mail should go to the Senate Office Building.

About the Forand Bill

Enclosed in the February issue of **Capsules** was the pamphlet "The Forand Bill and What You Should Know About It." This pamphlet explains in very simple terms why the Forand Bill is bad medicine not only for doctors but for the entire population. Additional copies of this pamphlet may be had free upon request to the Louisiana State Medical Society.

The Job Can and Must Be Done

Without question, the Forand Bill is the most serious threat to the private practice of medicine since the infamous Wagner-Murray-Dingell Bill of the 1940's. The Forand Bill must be opposed with the same vigor and effort as the Wagner-Murray-Dingell Bill if the private practice of medicine is to be preserved.

It's Your Fight

The worst thing you can do is nothing. Don't wait for your colleagues to do your job for you. If this bill passes, it will be because doctors let it pass. This is your fight. Write, write often, write **NOW!** Be sure to send a copy of all letters and resolutions to Rep. Wilbur D. Mills, Chairman of the House Ways and Means Committee, House Office Building, Washington 25, D. C.

For fear that some of our doctors might not read "Capsules," and realizing its importance to every physician in the State, the above information is also published in the Journal.

MEMBERSHIP DUES

Your membership dues to the Louisiana State Medical Society and American Medical Association are due and payable at this time.

Unless, in an exempt classification, you should pay your local, state and national membership dues at this time to assure your continuous membership in these respective organizations without delinquency or interruption.

Separate checks for Parish, State and AMA dues should be mailed to the Secretary of your Parish Medical Society. Membership dues for District Societies should be mailed to the Secretary of the respective District Societies.

State dues are $50.00 and AMA dues are $25.00. Since Parish and District Society dues vary, the proper amount can be obtained from the Secretaries of these Societies.

If you desire to cover local, state and national dues in one check, make check jayable to the Secretary of your Parish Medical Society. Your Parish Secretary-Treasurer should forward State and AMA dues to the Secretary of the State Society and he, in turn, will forward AMA dues to Chicago.

Medical Defense does not cover any member who has not paid his or her annual dues prior to the rendering of services for which damages are claimed.

Members exempted from paying State or AMA dues or both for 1959 will be automatically continued on the 1960 membership roster of both organizations, provided there has been no change in status.

Membership in the Louisiana State Medical Society should appeal to every thoughtful physician licensed to practice in Louisiana.

We are publishing a brochure listing the many advantages and benefits provided by this membership which will be mailed to all members and eligible non-members in the very near future. We would respectfully request each member to exert his best efforts and influence in obtaining new members for both the State Society and the AMA.

Do you know that with only 70 more AMA members our Society will be entitled to an additional delegate to the American Medical Association, giving us 3 delegates instead of two? An additional delegate would materially increase our influence in the national organization and be of immense value to us. Why not help us in obtaining this increase in membership?

You cannot afford to be without a dues-paying membership in the AMA, since, at this time, this membership gives a year's subscription to the Journal of the AMA, The AMA News, Today's Health, and a year's subscription to anyone of the Specialty Journals of your choice published by the American Medical Association and listed below.

1. Archives of Internal Medicine
2. American Journal of Diseases of Children
3. Archives of Neurology & Psychiatry
4. Archives of Dermatology
5. Archives of Surgery
6. Archives of Otolaryngology
7. Archives of Pathology
8. Archives of Ophthalmology
9. Archives of Industrial Health

Won't you help us increase our membership?

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE SOUTHEASTERN SURGICAL CONGRESS

Twenty-Eighth Annual Assembly

The Southeastern Surgical Congress will hold its twenty-eighth annual assembly on March 21, 22, 23, 24, 1960, Roosevelt Hotel, New Orleans.

An informative program has been planned and in addition to the many talks by guest speakers, Panel Discussions will be held on Monday, "Acute Intestinal Obstruction," on Tuesday, "Forum on Progress in Surgery," and on Wednesday, "When Things Go Wrong in Surgery—What Shall One Do?"

A complete listing of speakers and their talks will be found on pages 12 and 13 of the advertising section in this issue.

Those wishing to attend are urged to make their hotel reservations as early as possible by writing directly to The Roosevelt Hotel.

For further information, please contact: Dr. B. T. Beasley, Secretary-Director General, The Southeastern Surgical Congress, 340 Boulevard, N. E., Atlanta 12, Georgia, or, Dr. Howard Mahorner, General Chairman, Mahorner Clinic, 2030 St. Charles Avenue, New Orleans, Louisiana.

ANNUAL MEETING WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The West Virginia Academy of Ophthalmology and Otolaryngology will hold its annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia from April 10-12, 1960.

Among the guest speakers will be:

Dr. Harold G. Scheie, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Dr. Charles E. Iliff, Associate Professor of Ophthalmology, John Hopkins University School of Medicine, Baltimore, Maryland.

Dr. Oscar T. Becker, Clinical Professor of Otolaryngology, University of Illinois, Chicago, Illinois.

For any additional information, please contact the secretary, Dr. Albert C. Esposito, First Huntington National Bank Building, Huntington 1, West Virginia.

COURSE IN ANESTHESIOLOGY

The University of Texas Postgraduate School of Medicine announces the **Fifth Annual Course in Anesthesiology** to be held March 9, 10 and 11, 1960, in Houston, Texas.

The Course is designed to review theory and practice of commonly used anesthetic techniques and will include discussions of some of the newer drugs. Lecturers include:

Charles R. Allen, M. D.; James E. Armstrong, Jr., D.D.S.; Raymond F. Courtin, M. D.; William S. Derrick, M. D.; Richard C. Hay, M. D.; Emilia A. Hoeflich, M. D.; James Irvine, Jr., M. D.; Arthur S. Keats, M. D.; Kenneth K. Keown, M. D.; C. L. LaGrone, M. D.; Walter H. Mannheimer, M. D.; John W. Matthews, M. D.; Ray T. Parmley, M. D.; Eugene L. Slataper, M. D.; Stewart A. Wilber, M. D.

Please address all inquiries to: The University of Texas, Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

POSTGRADUATE COURSE ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the 13th Annual Postgraduate Course on Diseases of the Chest at the Sheraton Hotel, Philadelphia, March 14-18, 1960.

The most recent advances in the diagnosis and treatment of heart and lung diseases, medical and surgical aspects, will be presented.

Tuition for this five-day course will be $100, including round-table luncheon discussions.

Further information may be obtained by writ-

ing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

NEW OFFICERS

At the meeting of the Southern Medical Association in Atlanta, Georgia on November 15th-19th, 1959, the following officers were elected for the Section of Ophthalmology and Otolaryngology for 1960:

Chairman, Dr. George M. Haik, Professor and Head of the Department of Ophthalmology at Louisiana State University School of Medicine, 812 Maison Blanche Building, New Orleans 16, Louisiana.

Chairman-elect, Dr. Mercer G. Lynch, Assistant Professor of Otolaryngology, Tulane University School of Medicine, 3503 Prytania Street, New Orleans 15, Louisiana.

Vice-Chairman, Dr. Bernard J. McMahon, Director of the Department and Clinical Professor of Otolaryngology, St. Louis University School of Medicine, 8230 Forsythe Blvd., Clayton 24, Mo.

Secretary, Dr. Albert C. Esposito, First Huntington National National Bank Building, Huntington, West Virginia. Formerly instructor of Ophthalmology, Ohio State University College of Medicine, Columbus, Ohio.

The next meeting of the Section will be held in St. Louis, Missouri, from October 31st to November 3rd, 1960. Those interested in participating should write to the Secretary of the Section, Dr. Albert C. Esposito.

FORTHCOMING MEDICAL MEETINGS

Mid-South Postgraduate Medical Assembly
February 9, 10, 11, 12, 1960
Peabody Hotel, Memphis, Tennessee

—

Southern Trudeau Society
(and the Southern Tuberculosis Conference)
September 14, 15, and 16, 1960
Hotel Francis Marion, Charleston, S. C.

—

American College of Surgeons
46th Annual Clinical Congress
October 10-14, 1960
San Francisco, California

NEWEST ORAL DIABETIC DRUG IS "CLEARLY" USEFUL

DBI, the newest oral diabetic drug, is clearly of value in the treatment of all types of diabetes, Dr. Julius Pomeranze, New York, said recently.

Dr. Pomeranze, who conducted the first clinical tests of the drug, made his comment in the Sept. 19 Journal of the American Medical Association. He reported the results obtained in 206 diabetics given the drug for periods up to two years.

DBI, or phenethylbiguanide, is one of a group of drugs known as biguanides. It differs in action from other anti-diabetic drugs taken by mouth, which are sulfonylureas.

Dr. Pomeranze said, "The ultimate place of DBI in the management of diabetes will be determined after much more prolonged and widespread observation."

However, when it is used carefully, adjusting the drug to the patient's needs rather than attempting to fit patients into a rigid dosage pattern, it permits the cessation of insulin therapy in a significant percentage of diabetic patients and is useful, together with insulin, for better control of many of the patients with more severe cases.

The study showed that DBI could be used alone or with a reduced amount of insulin in 62 per cent of the patients regardless of the type of diabetes. The use of other oral drugs is limited to mild or stable cases of diabetes, since they are ineffective against juvenile or "brittle" diabetes.

DBI allowed some patients with mild diabetes to stop using insulin altogether and some with more severe cases to cut the amount of insulin used.

Diabetes occurs when the pancreas fails to secrete enough naturally-occurring insulin to burn up all the sugar taken in by the body. Then artificial insulin is necessary. The oral drugs do not replace insulin, but apparently help the body to better use what insulin it has.

Dr. Pomeranze said the sole limitation to the broader use of DBI appears to be its gastrointestinal side-effects. Twenty-six per cent of the patients treated had to stop the drug because of gastrointestinal side-effects. It seems that these are "inherent in the drug when proper individual dose is exceeded," Dr. Pomeranze said, but they may serve as a useful dose regulator and perhaps as a safety device.

Cooperating with Dr. Pomeranze in the study were Drs. George T. Mouratoff, Raymond J. Gadek, and Edward J. King. They are all associated with the New York Medical College-Metropolitan Medical Center Bird S. Coler Memorial Home and Hospital.

INTERNATIONAL ACADEMY OF PROCTOLOGY 1959-1960 AWARD CONTEST

The International Academy of Proctology announces its Annual Cash Prize and Certificate of Merit Award Contest for 1959-1960. The best unpublished contribution on proctology or allied subjects will be awarded $100.00 and a Certificate of Merit. The winning contribution will be selected by a Board of impartial judges, and all decisions are final.

The formal award of the First Prize, and presentation of other Certificates, will be made at the Annual Convention Dinner Dance of the

International Academy of Proctology, April 27th, 1960, at the American Hotel, Miami Beach, Florida.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, "The American Journal of Proctology". All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than the first day of February, 1960. Entries should be addressed to:

ALFRED J. CANTOR, M.D.
Executive Officer
International Academy of Proctology
147-41 Sanford Avenue
Flushing 55, New York

RARE CASES OF HALLUCINATIONS REPORTED IN A.M.A. ARCHIVES

When one person has a hallucination, it is interesting, but not unusual. When three persons—members of the same family— have similar ones, it is rare and medicine takes notice.

The cases of two families, each with three members who had similar hallucinations, are reported by Dr. N. Lukianowicz, Barrow Hospital, Bristol, England, in the September 1959 Archives of General Psychiatry, published by the American Medical Association.

Family A. consisted of a brother and two sisters. The brother and one sister lived together, while their married sister lived down the street. Their mother died at age 72 after long suffering from an inoperable cancer and senile dementia.

Shortly after the mother's death, all three children began "seeing" their mother just before they fell asleep. The brother said, "Since my mother died, her apparition comes usually twice a week through the closed door of my bedroom and stops at the foot of my bed. She stands there for a while and stares at me." A sister said, "She would come in, right through the panels of the door, and then would stop at my bed and gaze."

They also reported "hearing" their mother call them by name during the day.

Their hallucinations continued until the brother entered a hospital for surgery.

Family B. consisted of a father, mother and daughter. They too experienced similar hallucinations, although they also had individual ones. Father and mother were once awakened by a knocking at their bedroom door when no one was there. The mother told of waking and "seeing" her husband sitting at the foot of the bed with his head in his hands. She asked if he were ill and then realized that he wasn't there at all, but was sleeping beside her. The daughter had daytime auditory hallucinations.

The father suffered recurrent hallucinations during the daytime. He "felt" someone's hand resting on his shoulder. He explained, "I knew at once who it was. It was my father, for he always liked to put his hand on my shoulder when talking earnestly to me. I turned around, but there was no one there."

After the second such experience, he and his wife decided it was "a delayed shock" after his father's sudden death and that he must be "imagining things."

The hallucinations ended after Mr. B. underwent psychotherapy.

Dr. Lukianowicz explained that most of these experiences were connected with sleep—either occurring just before going to sleep or just after awakening. However, those that occurred during the day were probably "ordinary" or "genuine" hallucinations, similar to those occurring in psychotic states or during infections and illnesses.

In both families, the central theme of the phenomena was the figure of a deceased parent, for whose death their respective children held themselves responsible. It is assumed, Dr. Lukianowicz said that, these experiences were precipitated by fear and an anxious expectation of punishment.

Mr. B. hated his father, the doctor said, and entertained death wishes against him. When the old man suddenly died, Mr. B. held himself responsible and expected punishment, probably from the hand of his deceased father. The hallucinated "hand" resting on his shoulder may symbolize the warning of the approaching revenge or it may be a sort of conditioned reflex, since the father had rested his hand on Mr. B.'s shoulder when disciplining him.

Family A.'s strikingly similar and uniform hallucinations are not surprising, since, being siblings, they represent a more homogeneous group than Family B., Dr. Lukianowicz said.

The causative factors of the A.'s hallucinations may be similar to those of Mr. B.'s. Old Mrs. A., apart from being physically very sick, was also suffering from a mental illness, and must have been exteremely trying at times. Hence her children could not help developing some death wishes, which might even have had a certain "moral justification," the author said. She was obviously suffering and they only wished that the death might bring "a deliverance" to her from her misery. Nevertheless, when she died, they all felt guilty and responsible.

Thus the image of their dead mother became the kernel of their secret fears and the menacing content of their imagery. The hallucinations occurring before sleep might even be called "real nightmares." Mr. A.'s hallucinations disappeared after his surgery, perhaps because he felt the surgery to be a form of punishment.

UNIVERSAL IMMUNIZATION AGAINST LOCKJAW URGED

Universal immunization against tetanus, or lockjaw, was recommended recently by a researcher at Walter Reed Army Institute of Research.

In a report prepared for the American Medical Association's Council on Drugs, Dr. Geoffrey Edsall said, "Since all human beings are subject to some chance of contracting tetanus, all people should, ideally, be immunized with toxoid."

The "ubiquity in nature" of the tetanus bacillus is not always fully recognized, he said. It is present everywhere and every wound offers a chance for infection with the disease.

However, adequate immunization against tetanus may be achieved with a variety of separate or combined preparations. Tetanus toxoid (made from the bacillus and injected into the human, where it causes the body to develop defenses against the disease) is one of the most effective and safest immunizing agents known, Dr. Edsall said.

This was proved by experience in World War II, he continued. The tetanus rate of the U. S. Army, which in World War I was approximately 13 per 100,000 injuries, fell to the "incredibly low level" of 0.44 per 100,000 injuries (12 cases in over 2,500,000 injuries).

Basic immunization requires an initial injection of toxoid followed by a reinforcing dose 6 to 12 months later. Immunity, once established by adequate basic immunization, should be maintained by periodic booster shots at intervals of four or five years, he said.

Universal immunization would prevent practically all cases of tetanus which might otherwise follow trivial or unrecognized wounds. Recognized wounds must be treated individually; the most important procedure in handling tetanus-prone injuries, regardless of immunization, is adequate cleaning of the wound, he said.

While universal immunization is desirable, it probably cannot be readily achieved in the immediate future, Dr. Edsall said. Therefore, he recommended that attention be focused on those groups in whom tetanus immunization is especially indicated. They include:

—Persons, such as farmers, hunters, or operators of heavy machinery, who are subject to an apparently greater than average risk of tetanus-prone injuries.

—Military persons.

—Allergic individuals or those who are sensitive to horse serum preparations. Tetanus antitoxin, the rapidly acting substance which produces a temporary passive immunity to the disease, is made from horse serum.

—Groups readily reached en masse through child health programs or industrial health programs.

Dr. Edsall's report appears in the Sept. 26 A.M.A. Journal.

PERSONS OVER 40 NEED GLAUCOMA EXAMINATIONS

Examination for glaucoma, which may lead to blindness, should be an "indispensable" part of all physical examinations of persons over 40 years, five Memphis doctors said recently.

Persons with chronic diseases, such as hardening of the arteries, high blood pressure or arthritis, especially should be examined for the disease, the doctors said in the Oct 24 Journal of the American Medical Association.

In glaucoma, which is most prevalent in persons past 40 years of age, tension within the eyeball is increased. The structure contains fluid that keeps the orb from collapsing. The fluid enters through openings in one part of the eye and escapes from others. Glaucoma occurs when the outflow is blocked and the excess fluid builds up pressure in the eyeball and damages the nerve cells.

It can be treated and blindness prevented if the disease is discovered early enough. A simple test, tonometry, can show the presence of glaucoma.

The doctors reported a study of 13,155 persons in hospital and nonhospital groups during a two-year period. Tonometer testing revealed 271 cases of subclinical glaucoma not under treatment. During the same period 62 persons who visited the ophthalmology clinic at the teaching hospital of the University of Tennessee College of Medicine were found to have the disease.

The highest rate of glaucoma was found in residents of a home for the aged, where 6.4 per cent of those examined had the disease. The next highest rate (3.4 per cent) was in Negro women visiting outpatient clinics and in Negro males engaged in occupations involving considerable manual labor (3.1 per cent).

The lowest rate was in white women who engaged in occupations requiring "discriminatory visual activity," such as teaching or department store clerking, the doctors said. Their low rate may result from the fact that they have frequent eye examinations and glaucoma is discovered early.

In general the study produced three conclusions: glaucoma occurs more frequently as age increases; it occurs more frequently in Negroes than in white persons, and there seems to be an association between the disease and other chronic diseases, such as arthritis or high blood pressure.

The authors are Drs. Henry Packer, Alice R. Deutsch, Philip M. Lewis, Claude D. Oglesby, and A. C. Cheij.

BOOK REVIEWS

Medical Department, United States Army, Surgery in World War II. Cold Injury, Ground Type. Washington, D. C., Government Printing Office, 1958, Pp. 570.

Cold Injury, Ground Type, one of the volumes comprising the official history of the medical department of the United States Army in World War II, is a classic work on cold injury which is of value far beyond its place in this historical series.

In the first two chapters the epidemiology and the types of cold injury are considered. Here the problem is outlined as it affects the individual soldier on the one hand and an army of many soldiers on the other.

The historical section is devoted to a review of the role of cold injury in wars of the past two centuries. This is one of the most interesting chapters in the book and serves to put the subject in its proper perspective.

In the remaining chapters the experiences of the United States Army with cold injury in World War II are presented. As a medical officer with an infantry division in Italy this reviewer found much in this section that was familiar. The first formal mention of cold injury in the Office of the Surgeon General was contained in a note dated May 12, 1942. This note simply called attention to the fact that U. S. troops were operating in Arctic regions and that studies on health and sanitation in a cold environment should be instituted. It was almost a year before the problem was mentioned again, but there was still a failure to appreciate the importance of prevention. In August 1943, a memorandum was addressed to the Office of the Surgeon General pointing out that measures currently recommended for the control of cold injury were completely inadequate. It was also recommended that publications concerning cold injuries be corrected and brought up to date. In the fall of 1943, reports of trench foot began to come in from units in Italy and the problem rapidly assumed serious proportions. Although the military significance of this type of injury was apparent, it was evident from the reports that the importance of preventive measures was not sufficiently understood. By March 1944, preventive measures and management of cold injuries were thoroughly outlined and it was emphasized that implementation of these programs was a measure of discipline and the responsibility of unit commanders. War Department Technical Bulletin, dated August 4, 1944, covered all phases of cold injury and emphasized the value of prophylactic measures as a result of experiences gained in the Italian campaign.

In spite of this, however, a serious outbreak of cold injury occurred in the European theater of operations during the winter of 1944. In November 1944, approximately 11,000 cases of trench foot were reported in the European theater, an incidence greater than that reported for January and February 1944 in the U.S. fifth army in Italy. Thus it appeared that the lesson of the Italian campaign "was not heeded in the European theater of operations, or appreciation of its significance came too late." Control measures during the winter of 1944-45 were intensified but the tactical situation and the weather hampered their implementation. In March 1945, it was estimated that 45,000 predominately front line troops had developed some type of cold injury in the European theater and 30 per cent of these would require evacuation to the zone of interior. This failure to prevent cold injury among combat troops was discussed in the annual report of the Surgical Consultants Division to the Surgeon General for the year ending June 30, 1945, with the following conclusion: "Training troops on a subject of this type after they are engaged in intensive combat is less effective than training them during a period prior to such action. The main concern of men engaged in combat is the preservation of their lives. Attempts to teach men under such conditions measures for preventing trench foot, which to them is seemingly unimportant at the moment, are not likely to meet with any great degree of success."

The remainder of the book is devoted to a detailed review of the experience with cold injury in the various theaters of operation, and with a clinical consideration of cold injury. The pathogenesis, pathology, clinical manifestations, therapy and epidemiology of cold injury are thoroughly discussed. The final chapter is devoted to an analysis of the failure to cope successfully with cold injury in World War II. That the causes for the failure were finally appreciated and remedial steps taken was indicated by the program of prevention and control which was planned for the invasion of Japan and it appeared that the "sign post of Attu, the Mediterranean theater and the European theater had at last been read and heeded." It was finally realized that the combat soldier is as ineffective when evacuated from the front because of cold injury as he is when he is sent to the rear with a combat wound. It was also realized that instruction of the soldier in the proper use of clothing and winter equipment is just as important as training in the use of his rifle to protect himself in combat.

From a military standpoint this volume on cold injury is invaluable as a historical document and also as a reference for future military operations. In addition, it represents a definitive work on the ground types of cold injury and should be read by everyone interested in this problem.

Oscar Creech, Jr., M. D.

The Relation of Psychiatry to Pharmacology; by Abraham Wikler, M. D., Baltimore, Maryland. Pub. for the American Society for Pharmacology and Experimental Therapeutics by Williams and Wilkins Co., 1957, pp. 322, Price $4.00.

This manuscript is written in Dr. Wikler's typically lucid style. The author has undertaken a comprehensive study of most of the compounds used in this field, and considered them from a variety of scientific disciplines. Although the references are not exhaustive, they do, in fact, include most of the more important contributions to this field up to the time of publication. The index is complete and simple to use with adequate cross references.

This book is a necessary addition to the reference library of persons interested in pharmacology and psychiatry. Furthermore, because so many of the compounds mentioned are used daily in general practice, it would also be of considerable value to the general practitioner.

WILLIAM A. KRIVOY, PH.D.

Surgeons All; by Harvey Graham, M. D., New York, Philosophical Library 1957, pp. 459. Price $10.00.

This eminently readable history of surgery was first published in 1939, and a "postscript" has been added to the recent edition. The story begins with the trepanning of skulls in the caves of prehistoric man, and it ends with a glimpse into the near future. In between, the author discusses the high place of surgery in Greece and Egypt, the depths to which it descended during the Middle Ages, and the general emergence of surgery as a respectable segment of the medical community. Of particular interest is the story of the separation of surgeons from the guilds of barber-surgeons in the late Middle Ages.

The author's method is largely biographical and the entire story is told with urbane humor. The style is erudite but not ponderous. The book is highly recommended, particularly for surgeons, who will find it a pleasurable excursion into the rather strange origins of modern surgery.

KEITH REEMTSMA, M. D.

An Atlas of Normal Radiographic Anatomy. R. Meschan. 2nd Edition. Philadelphia, W. B. Saunders Co., 1959. pp. 759, $16.00.

In the second edition of this very useful text the additions include chapters on radiation protection, bone growth and development, and there has been amplification of the portions on the brain, spine, and cardiovascular systems. Several of the prints from the previous book have been replaced by LogEtronic prints which improve the detail.

The combination of showing the patient in position, the resulting radiograph, and the diagrammatic sketch with the anatomic features labeled forms a very effective teaching mechanism. This book is highly recommended as a reference book for medical students and probably should be studied as a basic text for beginning residents in radiology. Other physicians might well use it as a reference work especially when referring to questions that might involve radiographic anatomy in the various systems of the body demonstrated in various positions.

CHARLES M. NICE, JR., M. D.

Roentgen Diagnosis of Abdominal Tumors in Childhood; by Charles M. Nice, Jr., M. D., Alexander R. Margulis, M. D., and Leo G. Rigler, M. D., Springfield, Illinois, Charles C Thomas, Pp. 75, with 52 illustrations, $4.00.

This excellent little monograph presents the approach and practices of the Department of Radiology at the University of Minnesota Medical School. Reliance is placed principally upon conventional x-ray diagnostic procedures available everywhere; these can be modified as the problem demands so as to accurately localize the mass insofar as possible. In this respect, the importance of lateral projections on plain films, as well as on the usual contrast examinations, is justifiably stressed and a goodly number of cases depicting their value are presented. Also of importance is the character of the mass itself with respect to its size, contour, presence or absence of calcifications, et cetera.

The authors (and rightly so) consider that special studies such as planigraphy, aortography and presacral carbon dioxide insufflation are sometimes of value, but in the great majority of cases are not essential in arriving at a correct diagnosis. The illustrations are ample in number and of good quality.

ROBYN HARDY, JR., M. D.

Hearing. A Handbook for Laymen; by Norton Canfield, M. D. Garden City, Doubleday & Company, Inc., 1959. pp. 214. Price $3.50.

This handbook on hearing, written for the layman by Norton Canfield, is full of factual information on a variety of subjects connected with impairment or total loss of the auditory function, including the causes of the impairment; techniques of diagnosis; medical and surgical techniques of correction for the types of impairment in which those methods are feasible; and techniques of rehabilitation for persons for whom medical or surgical therapy is not indicated and would be useless.

The importance of the patient's own recognition of his impairment is fully discussed. The sound advice is given—more easily than accepted—that he should obtain an evaluation of his status from an expert in the field, face the facts, and follow the recommendations he is given for

treatment or rehabilitation. More emphasis might perhaps have been put on the indisputable fact that in many cases, rehabilitation is the only feasible mode of management.

The importance of early diagnosis is stressed. The abbreviated case reports in the first chapter make clear that this is a problem which affects all ages, from infancy to the other extreme of life, in which dwell so-called senior citizens, a euphemism particularly regrettable in a generally plain-spoken text. There is sound advice on the early recognition and prompt treatment, by every practical method, of impaired hearing in children. Greater emphasis might have been placed on the dangers of the current tendency to treat acute middle ear infections by antibiotics alone, a practice which has been the cause of an appalling amount of deafness in young children.

As the late Dr. Walter Hughson pointed out, the psychologic implications of deafness are more important than those of any physical impairment. This is repeatedly noted in this book, which covers the emotional as well as the physical needs of the individual who has been sustained a hearing loss. There is also an excellent and helpful chapter on the acceptance of the patient's disability by his family and friends, with some useful suggestions on how they can help to alleviate his difficulties.

One wishes that a more detailed account had been given of the fine work accomplished at the Army aural rehabilitation centers in World War II, through which 9,500 deafened and hard-of-hearing patients passed in the three years of their operation. The results accomplished, often on unpromising material, might well serve as an inspiration to others similarly afflicted.

One also regrets that there is no index. The ommission of such an essential tool reduces the usefulness of any volume, as this reviewer can testify when he found it necessary to refer back to particular items in this book. The detailed chapter headings are not a satisfactory substitute.

Since, as the author states, the terms anacousis, hypacousis and dysacousis are not used in this book, it is a pity that they were dragged into the introduction. The nomenclature "now being established by the authorities" does not conform with established definitions and there seems little need or warrant for it.

The author has had a long experience in this field, and his presentation is generally sympathetic and sensible. This is a book which has long been needed. It would be well for all otologists to read it themselves and to recommend it to their patients. Most of them would benefit by the guidance it offers.

J. W. McLaurin, M. D.

Allergy in Pediatric Practice; by William B. Sherman, M. D. and Walter R. Kessler, M. D., St. Louis, Missouri, C. V. Mosby Company, 1957, pp. 296, price $9.25.

This book reflects the well thought out position of two specialists, one in allergy, one in pediatrics, having the child as the focal point of interest. The result is an excellent presentation of an important subject, written without excess verbiage but yet in a comprehensive fashion. It will find its greatest usefulness perhaps in the hands of general practitioners and those pediatricians without special training in allergy.

Vincent J. Derbes, M. D.

Milestones in Modern Surgery; by Alfred Hurwitz, M. D. and George A. Degenshein, M. D., New York, Hoeber-Harper, 1958, pp. 520, Price $15.00.

This beautifully prepared anthology is a tribute to the editors who selected and arranged the contents, as well as to the publishers who presented it in such an attractive manner. Many of the truly great contributions to modern surgery, together with a brief introductory biography of the physician who made the contributions, are reproduced. In Dr. Dunphy's "Foreword" to the book he pointed out that " . . . there may be a few who will disagree with the authors' choice of particular articles as milestones . . . " This is undoubtedly true as one's concept of the importance of contributions to medicine are naturally influenced by his professional background and his particular interests in surgery. The selections included in this book are certainly among the outstanding achievements in modern surgery and I believe represent as fair a selection of works of this type as one would expect to be compiled in a single book.

John Blalock, M. D.

PUBLICATIONS RECEIVED

Julian Messner, Inc., N. Y.: Smoking and Health, by Alton Ochsner, M. D.

Grune & Stratton, Inc., New York: Antithrombotic Therapy, by Paul W. Boyles, M. D.

Philosophical Library, Inc., New York: Medieval and Renaissance Medicine, by Benjamin L. Gordon, M. D.; The Story of Dissection, by Jack Kevorkian.

U. S. Army Medical Service, Office of the Surgeon General, Wash.: Tabulating Equipment and Army Medical Statistics, by Brig. Gen. Albert G. Love, Col. Eugene L. Hamilton, and Ida Levin Hellman, M. Sc.

Vantage Press, Inc., N. Y.: Doctor Strand, by Boris Sokoloff; A Practical Guide to General Surgical Management, by Julian A. Sterling, M. D.; A Doctor Enjoys Sherlock Holmes, by Edward J. Van Liere, M. D.



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REFERENCES:

1-11. Papers read at Seventh Symposium on Antibiotics, Washington, D. C., November 4-6, 1959.

12. Phillips, F. M.: DECLOMYCIN—Seventh Interim Report. Department of Clinical Investigation, Lederle Laboratories, Pearl River, N. Y., December 4, 1959.

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genitourinary infection. Roberts, M. S.; Seneca, H., and Lattimer, J. K.,[1] New York, N. Y.—Ninety-one per cent of the Gram-positive and 27 per cent of the Gram-negative, among 66 organisms cultured from genitourinary infection, responded to DECLOMYCIN. Serum antibiotic activity was found three times greater than with tetracycline.

toleration. Boger, W. P., and Gavin, J. J.,[2] Norristown, Pennsylvania—Side effects with DECLOMYCIN were minimal. When dosage was 0.5 to 1 Gm. daily in divided doses, only two of 82 patients exhibited nausea.

activity level sustentation. Kunin, C. M.; Dornbush, A. C., and Finland, M.,[3] Boston, Massachusetts—Of the four tetracycline analogues, DECLOMYCIN Demethylchlortetracycline showed the longest sustained activity levels in the blood.

gonococcal infection. Marmell, M., and Prigot, A.,[4] New York, N. Y.—Of 63 cases of gonorrhea, 61 promptly responded after short courses of DECLOMYCIN. Therapeutic effect was found equal to that of intramuscular penicillin.

bronchopulmonary infection. Perry, D. M.; Hall, G. A., and Kirby, W. M. M.,[5] Seattle, Washington—Of 30 cases of acute bacterial pneumonia, all were afebrile following two to 10 days of treatment with DECLOMYCIN. Results were good in 21.... All of six patients with acute bronchitis responded promptly.

pediatric infection. Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T.,[6] Tokyo, Japan—In 309 pediatric patients with various infections, DECLOMYCIN was effective in 75 per cent.

urogenital infection. Vineyard, J. P.; Hogan, J., and Sanford, J. P.,[7] Dallas, Texas—Clinical response in pyelonephritis correlated well with results of *in vitro* sensitivity tests, which showed some strains of *A. aerogenes*, Proteus and Pseudomonas more susceptible to DECLOMYCIN Demethylchlortetracycline than to its analogues.

pneumonia. Duke, C. J.; Katz, S., and Donohoe, R. F.,[8] Washington, D. C.—Results were satisfactory in all but two of 32 cases of acute bacterial pneumonia, of which only 11 were uncomplicated. No side effects were observed.

brucellosis. Chávez Max G.,[9] Mexico, D. F., Mexico—All of nine patients with *Br. melitensis* infection were afebrile after five days on DECLOMYCIN. Blood cultures were negative in all cases on the 20th day. Side effects were limited to slight temperature increases which abated in four days.

pustular dermatosis. Blau, S., and Kanof, N. B.,[10] New York, N. Y.—Results with DECLOMYCIN were excellent in both of two cases of impetigo, one of two cases of folliculitis, six of nine cases of furunculosis, all of three cases of acne rosacea and 26 of 45 cases of acne vulgaris. Overall, results were excellent or good in 85 per cent.

antibacterial spectrum. Finland, M.; Hirsch, H. A., and Kunin, C. M.,[11] Boston, Massachusetts—DECLOMYCIN Demethylchlortetracycline was found the most effective of the tetracycline analogues against two-thirds of 680 normally sensitive strains of 15 separate species.

the over-all picture. Combined results reported by 210 clinical investigators[12]—DECLOMYCIN produced a favorable response (cured or improved) in 87 per cent of 1,904 patients. Two-thirds of the patients received one capsule every six hours. Treatment was continued for as long as 180 days, but was between three and eight days in most. Side effects were seen in 9.9 per cent, but necessitated discontinuance of treatment in only 1.8 per cent.

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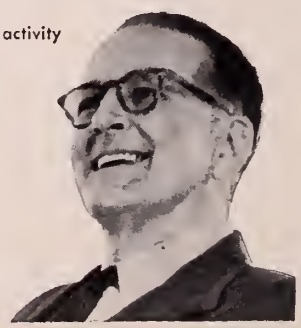
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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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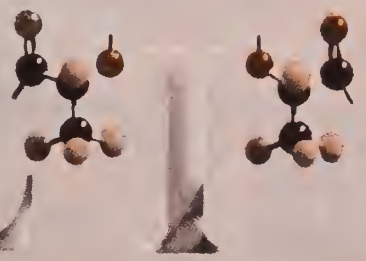
IMPROVED ANTIBIOTIC ACTION FROM ISOMERIC COMPLEMENTARIT





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SYNCILLIN™



POTASSIUM PENICILLIN-152

ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSE

REDUCED RATE OF INACTIVATION BY STAPH PENICILLINASE

MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN IN VITRO

BRISTOL





FOR HIGHLY EFFECTIVE THERAPY OF THE LARGE VARIETY OF INFECTIONS CAUSED BY SUSCEPTIBLE PATHOGENS... NEW

SYNC

Significance of complementary action of isomers in SYNCILLIN

The antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than that of either of its two component isomers alone against many important pathogens, including some penicillin-resistant staphylococci. This phenomenon has been described as *Isomeric Complementarity*.

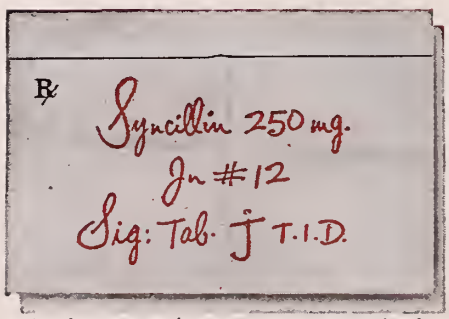
Significance of higher blood levels with SYNCILLIN

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition, these higher levels may be necessary where there is infection in areas with a poor blood supply.[6] Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

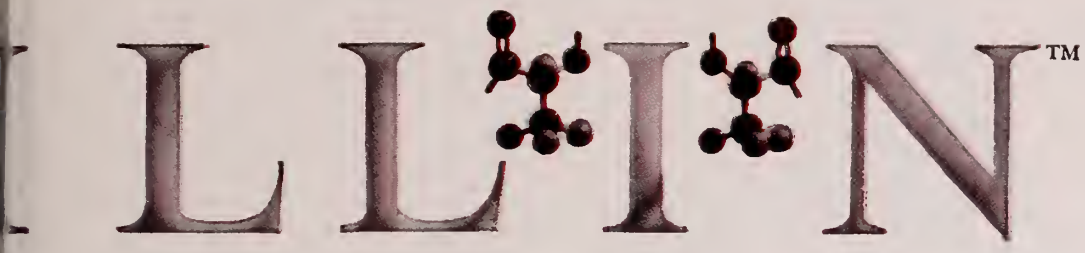
Efficacy of SYNCILLIN against staphylococci and other resistant organisms

Studies have shown that SYNCILLIN is effective *in vitro* against 60 to 75% of hospital "staph" strains, while penicillin G and penicillin V are now effective against only 30 to 50%.[1, 2] Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN would be expected to be the most effective. However, since some strains are still resistant to SYNCILLIN as well as to the other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal[3] and gonococcal[4, 5] infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



major therapeutic advantages accompany molecular asymmetry



Relation of intermittent high blood levels of SYNCILLIN to antibacterial efficacy

SYNCILLIN, like all clinically available penicillins, is bactericidal. Periodic high blood concentrations are sufficient to permit complete eradication of sensitive pathogens. Continuous high blood levels are not required with SYNCILLIN. According to Eagle,[7] "Soon after penicillin attains effective concentrations, the bacteria cease multiplying; and the bacteriostatic effect persists for a number of hours after penicillin has fallen to concentrations that are wholly ineffective....The therapeutic significance of this postpenicillin recovery period is enhanced by the fact that the recovering bacteria, damaged but not killed by the previous exposure to penicillin, are abnormally susceptible to the host defenses. In consequence, the bactericidal process *in vivo* continues for many hours after the drug itself has fallen to ineffective concentrations."

Reduced rate of inactivation of SYNCILLIN by staph penicillinase

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V and penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillin V and G. But this would not impede the therapeutic use of this penicillinase in allergic reactions. This is because the massive dosage with which this enzyme is administered would effectively destroy SYNCILLIN in the body.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Kligman, A.; Morigi, E. M. E.; Wheatley, W. B., and Albrigbt, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (Marcb 29) 1958. 5. Epstein, E.: J.A.M.A. **169**:1055 (March 7) 1959. 6. Kass, E. H.: Am. J. Med. **18**:764 (May) 1955. 7. Eagle, H.: J. Bact. **58**:475, 1949.

Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective against certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. *Therefore, the usual precautions for oral penicillin therapy should always be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.
Diarrhea has been reported occasionally following heavy dosage. If tbis occurs, lengthen tbe interval between dosages.
If superinfection occurs during therapy, appropriate measures should be taken. Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

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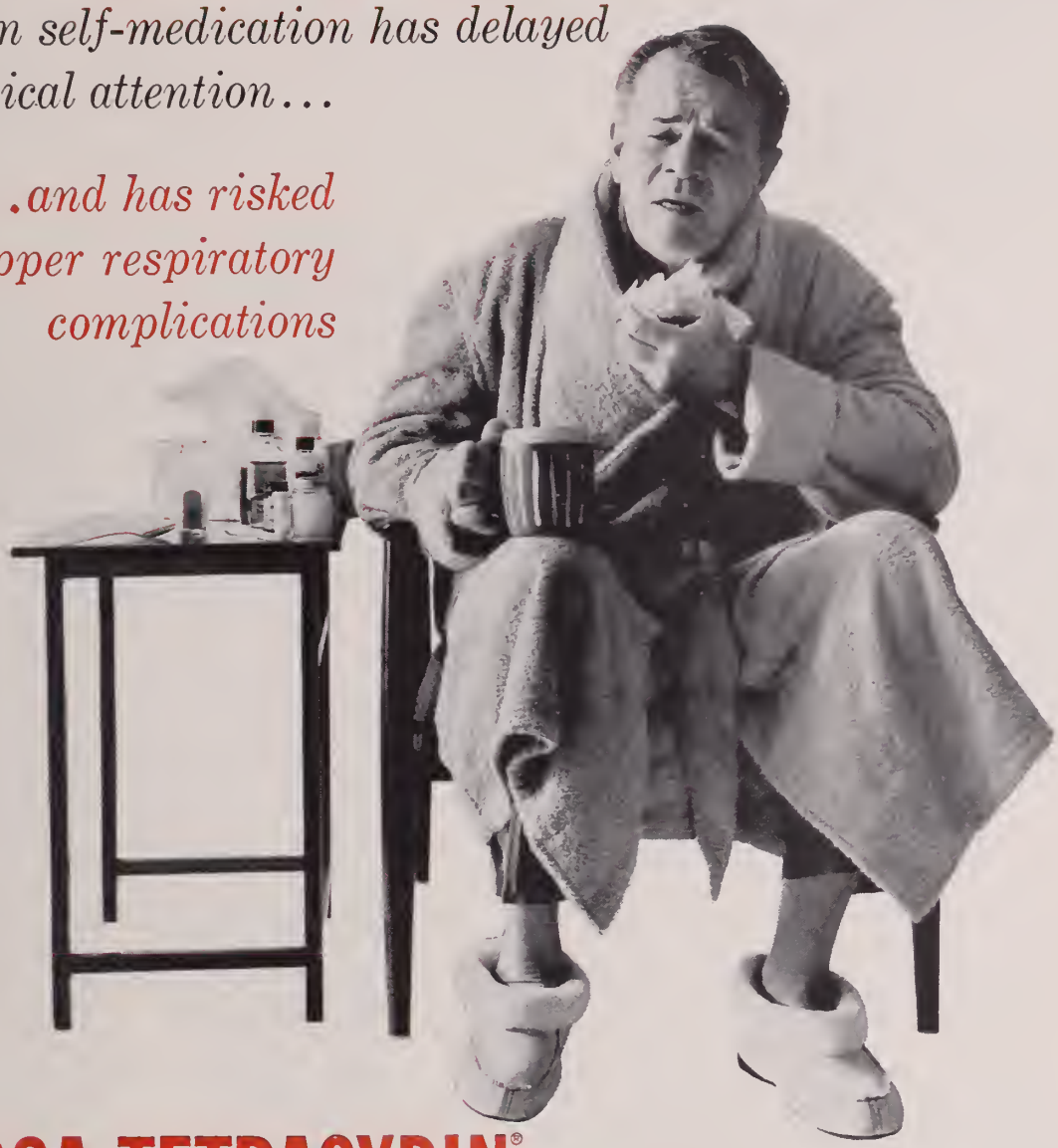
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1. Kuge, T.: To be published.

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For a salad try split bananas over cottage cheese, top with puréed apricots. To make a parfait—alternate layers of farina pudding and puréed plums. Rice cooked in pineapple juice, water and sugar makes a golden dessert.

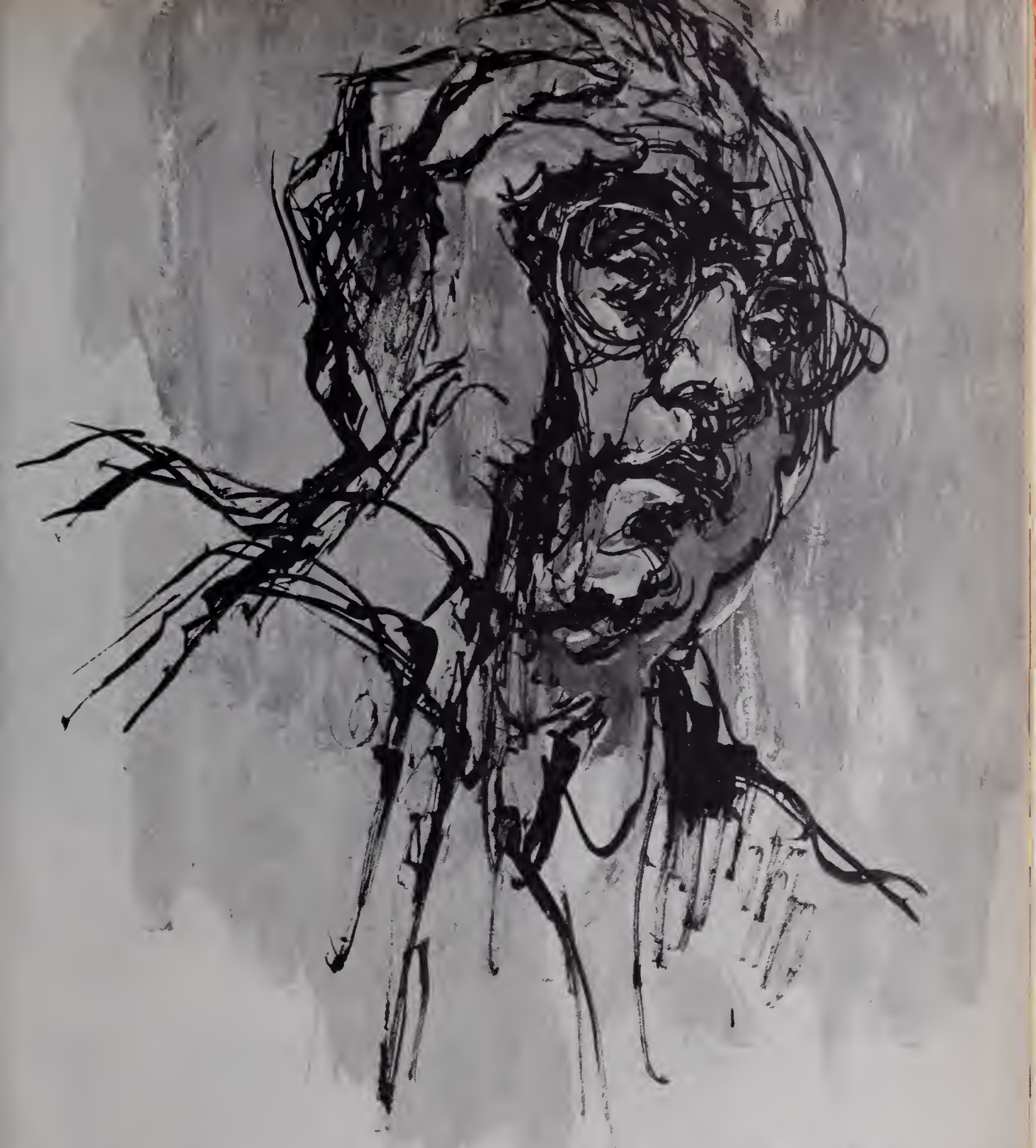


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Two dosage strengths—PATHIBAMATE-400 and PATHIBAMATE-200 facilitate individualization of treatment in respect to both the degree of tension and associated G.I. sequelae, as well as the response of different patients to the component drugs.

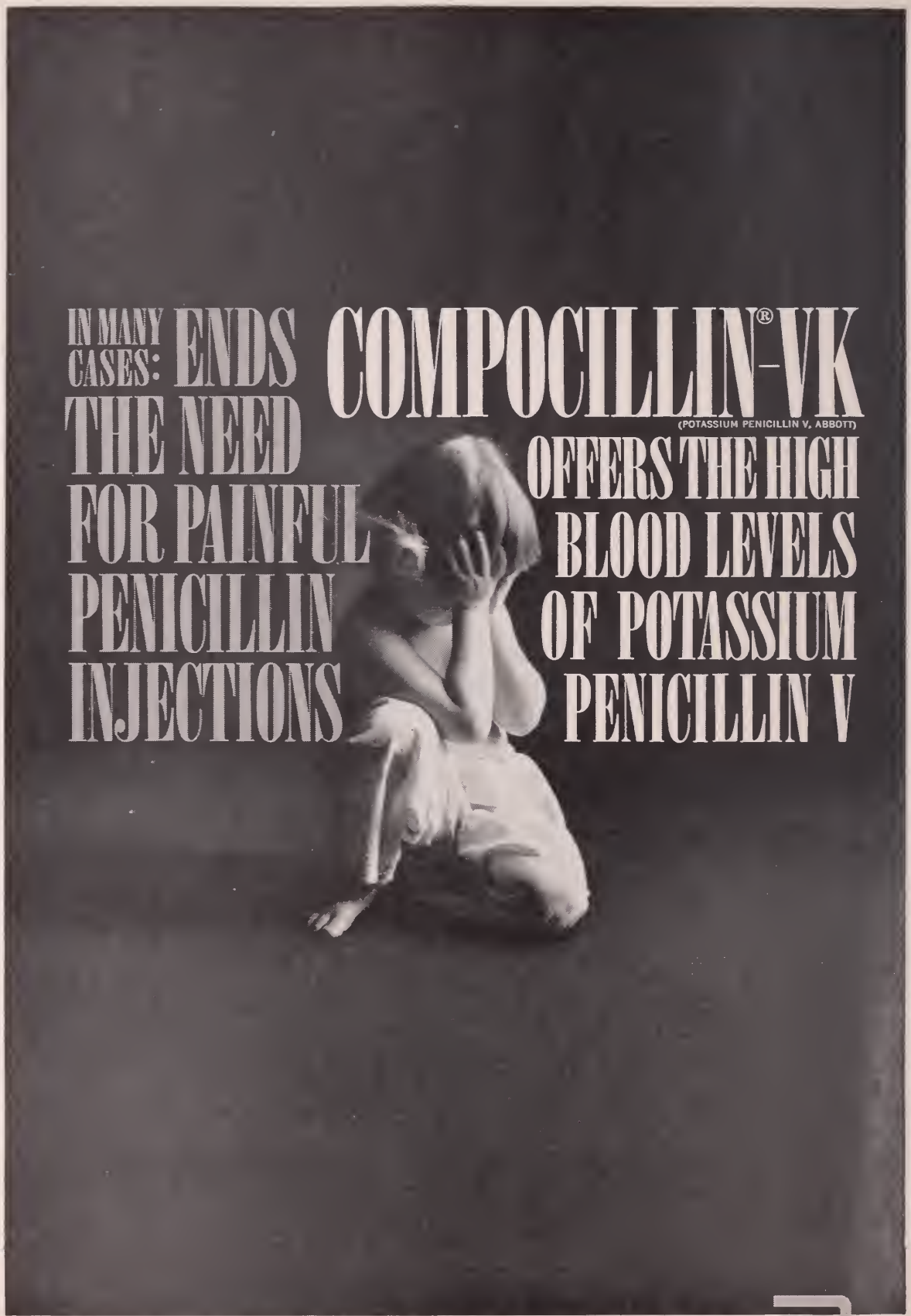
Supplied: **PATHIBAMATE-400**—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride, 25 mg.
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Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.

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Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

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Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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EFFECTIVE: Bile influences the constitution as well as the movement of the intestinal contents. The ingredients of major importance are DECHOLIN and desoxycholic acid which increase the flow of bile, lower surface tension, promote emulsification and absorption of fats and mildly stimulate intestinal peristalsis. With dioctyl sodium sulfosuccinate, a good therapeutic effect can be obtained without the danger of toxicity or decreasing effectiveness even when used regularly.

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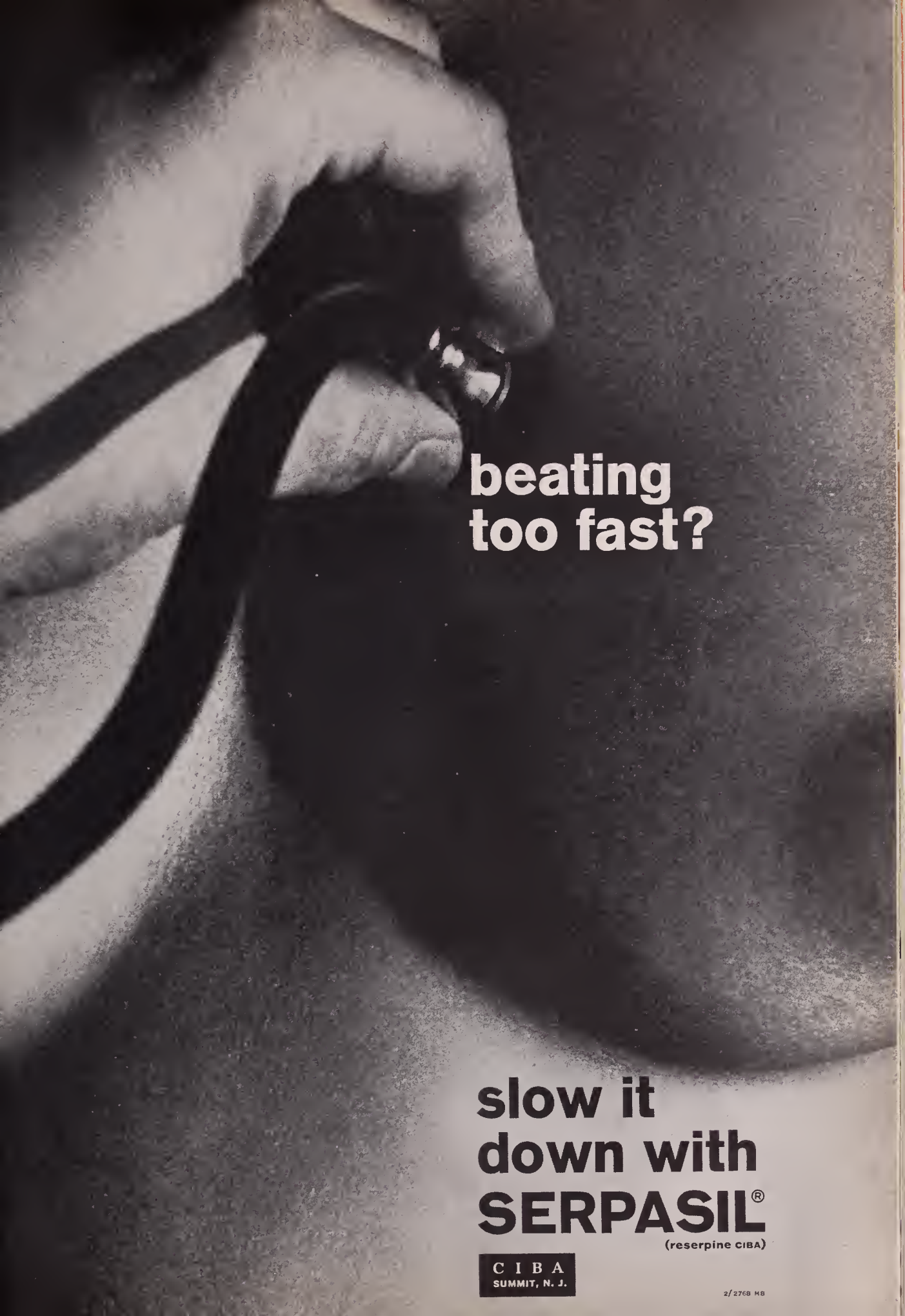
Dosage: *Average adult dose*—Two TRABLETS* at bedtime. Some individuals initially may require 1 to 2 TRABLETS three or four times daily. *Contraindications:* Biliary tract obstruction; acute hepatitis.

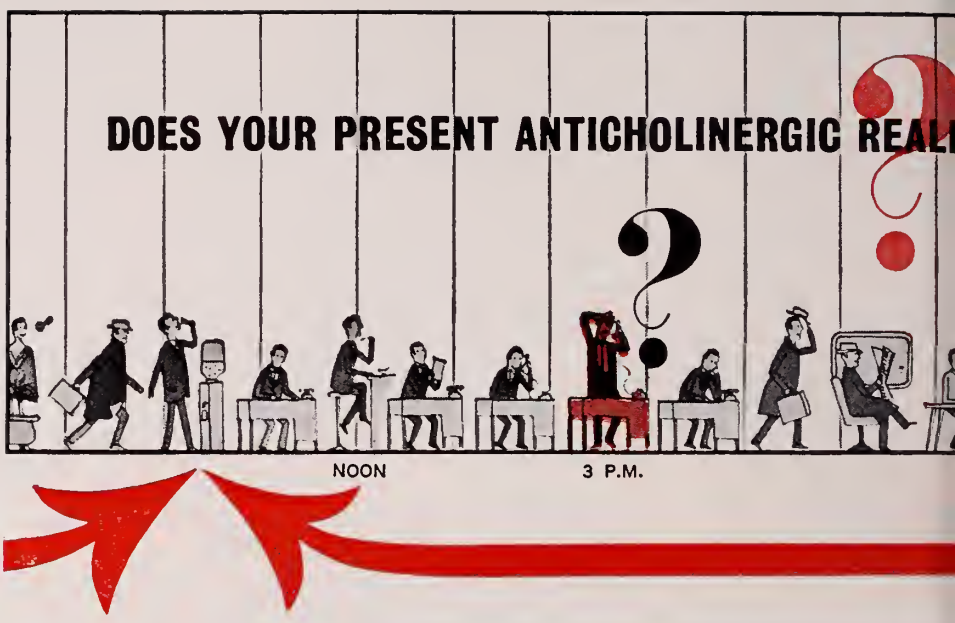
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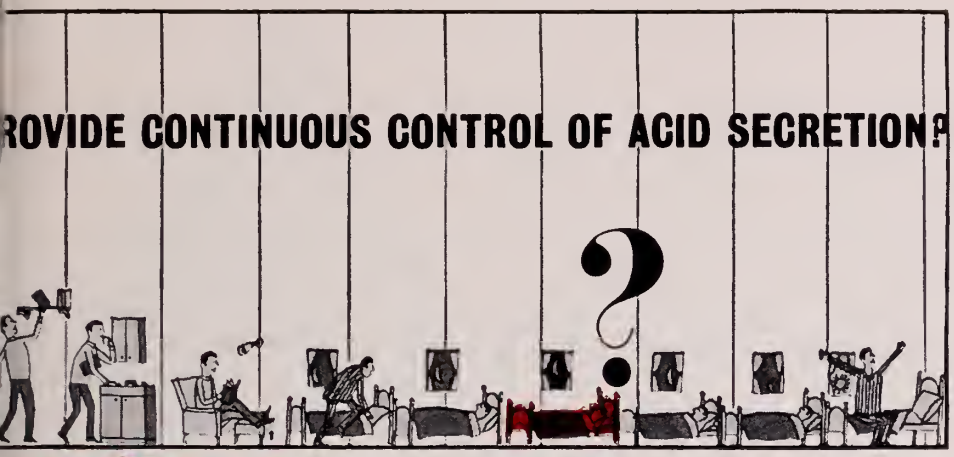
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does.**

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(oxyphencyclimine plus ATARAX®)

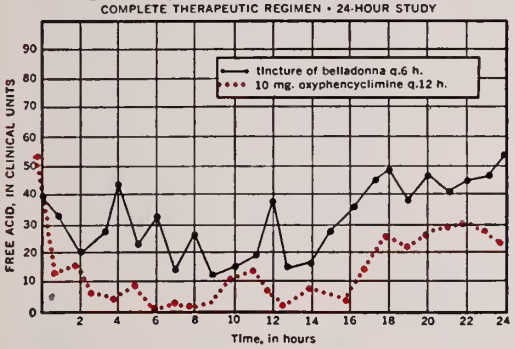
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Clinical Results: Effective in over 92% of cases.

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Each ENARAX tablet contains:

Oxyphencyclimine HCl ..... 10 mg.
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Dosage: One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

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When you want to prescribe a diet to lower serum cholesterol, is a low-fat low-cholesterol diet the best way?

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This means to control the total calories and to replace the saturated fats wherever possible with poly-unsaturated vegetable oil.

There is a considerable agreement among heart research workers that a low-fat diet does not by itself consistently reduce beta lipoproteins and blood cholesterol or sustain a low level. Many low-fat diets merely eliminate the visible fats. The *invisible* fat, inherent in meat and dairy products, is basically *saturated fat*, so that a low-fat diet quite frequently is actually relatively high in saturated fat. Consequently, the patient does not get the proper percentage of the *poly-unsaturated fatty acids* that help to lower blood serum cholesterol and to maintain it at proper levels.

We know today that a low-cholesterol intake (dietary cholesterol) has little or no bearing on serum cholesterol. Too, that it would be most undesirable to eliminate all cholesterol-containing foods from the diet, because they carry with them so many important accessory nutrients.



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The diet preseribed to lower cholesterol can inelude a breakfast egg cooked in poly-unsaturated Wesson.

Preferably, antibiotic therapy should be based on pretreatment culture of the offending pathogen, but in bacterial pneumonia the problem may well be too pressing to permit the required delay of 24 to 48 hours. A differential diagnosis among bacterial pneumonias, based on such clinical grounds as speed of onset, sepsis and pain may guide the choice of antibiotic for initiation of therapy.

Should clinical judgment dictate that antibiotic therapy be started immediately, at the same time a sputum sample or a subglottic swab can be sent to the laboratory for culture and sensitivity studies. If the response to the first antimicrobial agent proves unsatisfactory, a reasonable basis for changing therapy will then be at hand.

Choosing the Antibiotic

Since therapy must be started at once for bacterial pneumonia, it is advisable to choose a broad-spectrum antibiotic that quickly produces high levels of active agent (e.g., tetracycline phosphate complex, TETREX). Such an antibiotic probably has the best chance of controlling the pathogen, whether it be gram-negative or gram-positive. And if the laboratory report shows that the invading organism is much less sensitive to tetracycline than to other agents, the patient can then be changed to an appropriate antibiotic. If the difference in sensitivity is slight, then the possibility of side effects, sensitization, and toxicity should be evaluated before changing therapy to another antibiotic.

The greatest number of bacterial pneumonias are caused by pneumococci, which respond very well to penicillin, tetracycline, and chloramphenicol. Also, these antibiotics are usually effective against the other gram-positive coccal pneumonias. But penicillin is ineffective against the viral pneumonias and the gram-negative *Hemophilus influenzae* and *Klebsiella pneumoniae*. Although *K. pneumoniae* causes only about 1 to 2 per cent of pneumonia cases on the average,[1] these are apt to be acute and fulminating (Friedländer's pneumonia), with a high mortality rate if not effectively treated. Since pneumococcal pneumonia may be difficult to distinguish clinically from Friedländer's, except by gram-stained sputum smear, it may be wiser to start treatment with an agent also effective against Klebsiella.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reaction. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

Tetracycline is also clinically effective in primary atypical pneumonia.[3]

The tetracyclines (e.g., TETREX) have the advantage of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

No one would deny that appropriate antibiotic therapy has greatly reduced morbidity and saved many lives of patients with bacterial pneumonia. Nevertheless, general supportive measures in the care of patients remain important even today. Especially in the desperately ill patient, antibiotics are not considered as substitutes for the individual evaluation, clinical observation and judgment of the physician.

***Some Micro-organisms Susceptible[a] to Tetracycline* (TETREX)[b]**

Streptococcus; Staphylococcus; Pneumococcus; Gonococcus; Meningococcus; *C. diphtheriae; B. anthracis; E. coli;* Proteus; *A. aerogenes; Ps. aeruginosa; K. pneumoniae;* Shigella; Brucella; *P. tularensis; H. influenzae; T. pallidum;* Rickettsiae; Viruses of psittacosis and ornithosis, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica; D. granulomatosis.*

a Some strains are not susceptible.

b Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics. 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

References: 1. Wood, W. E., Jr.: In: A Textbook of Medicine. Edited by Cecil, R. L., and Loeb, R. F., 9th edition, Philadelphia, W. B. Saunders Co., 1955, p. 145. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (Dec.) 1957. 3. Keefer, C. S.: The choice of an anti-infective agent. In: Drugs of Choice, 1958-1959. Edited by Walter Modell, St. Louis, The C. V. Mosby Co., 1958, p. 135.

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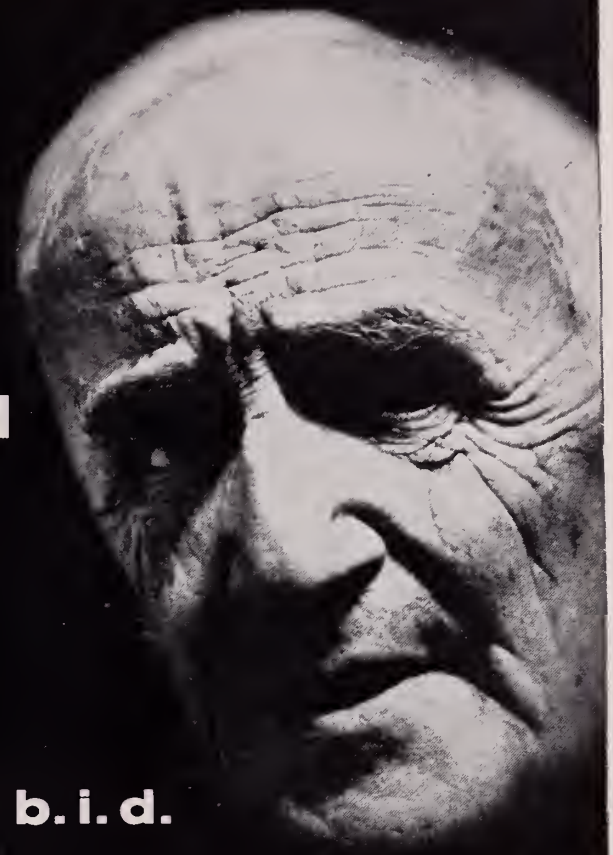
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The pattern is similar in every new series reported: Ganz,[4] DeNyse,[5] Shanaphy[6] and Stough.[7]

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Professional models used for photographs.

References: 1. Lichtman, A. L.: Scientific Exhibit, meeting of the International College of Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 2. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 3. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 4. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 5. DeNyse, D. L.: *M. Times* 87:1512, Nov., 1959. 6. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 7. Stough, A. R.: *J. Oklahoma M. A.* 52:575, Sept., 1959.

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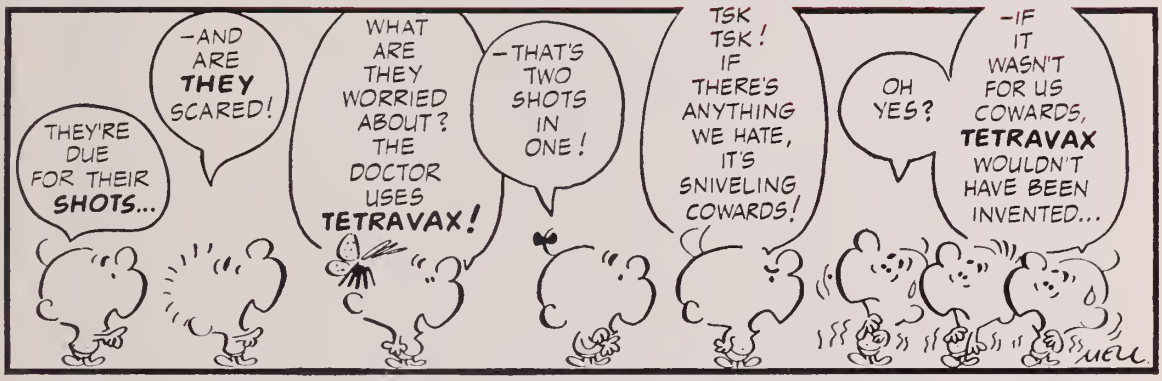
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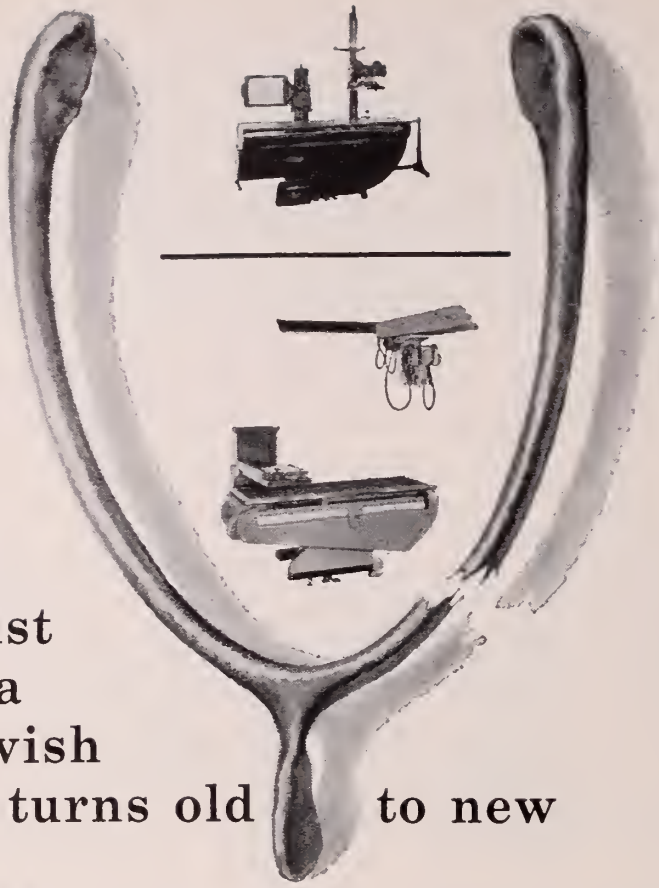
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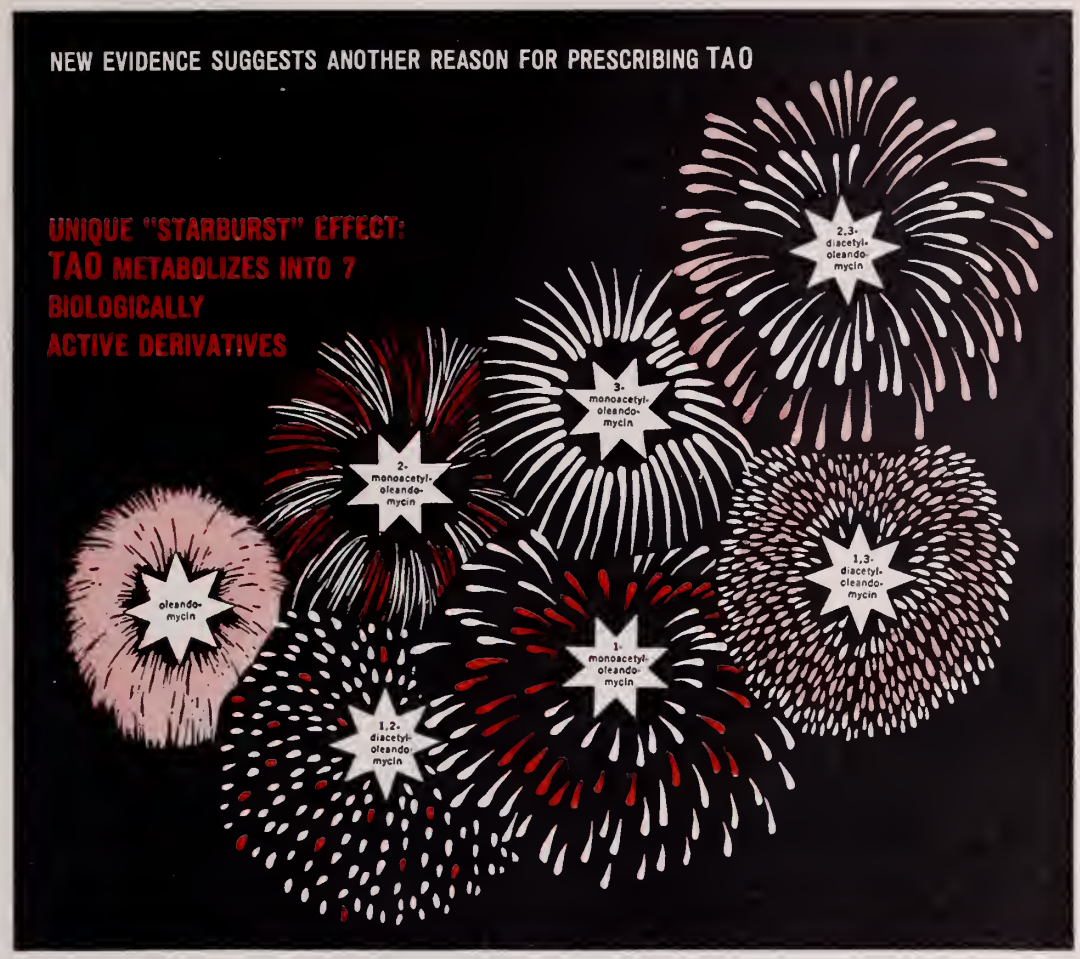
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1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. 100:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. 8:420 (Aug.) 1958.

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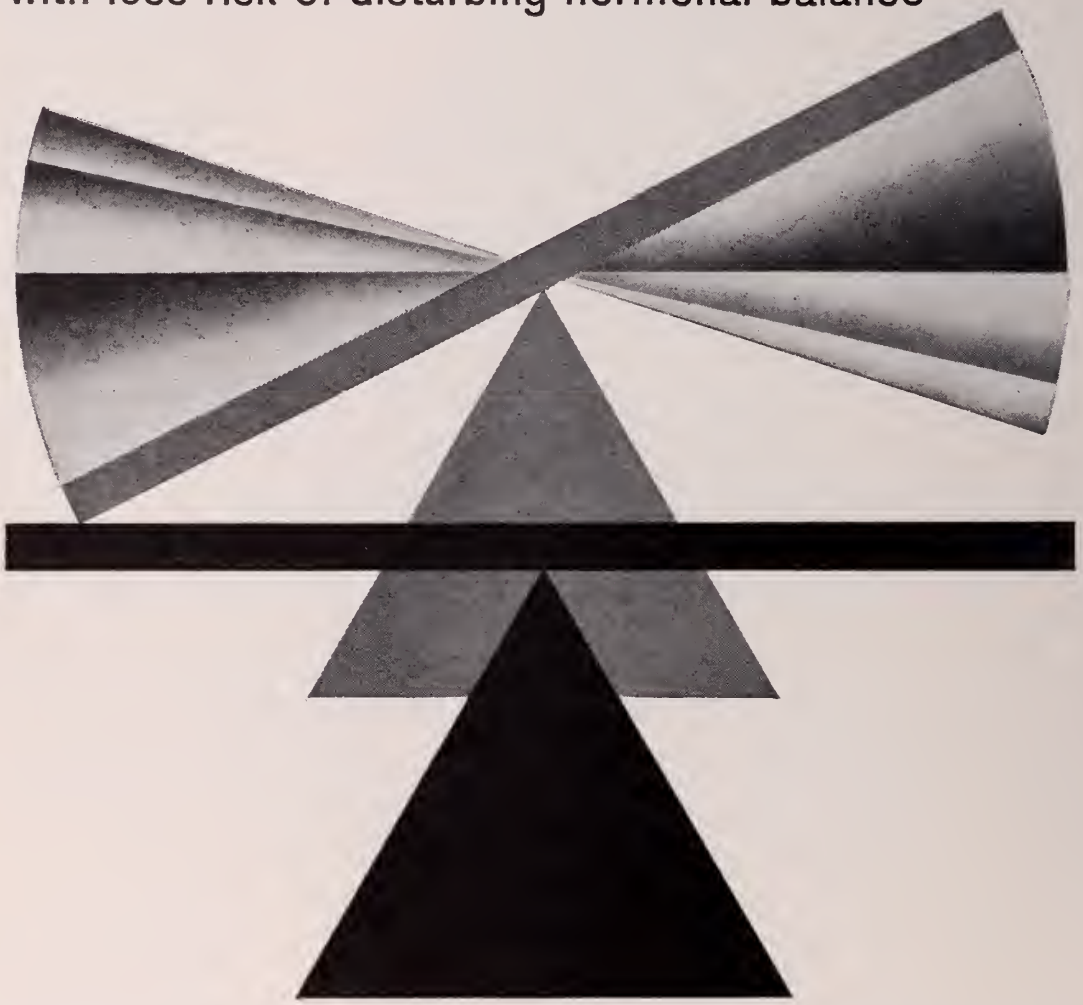
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1. Kuzell, W. C., and others.: Arch. Int. Med. 92:646, 1953. 2. Wolfson, W. Q.: J. Michigan M. Soc. 54:323, 1955. 3. Strandberg, B.: Brit. J. Phys. Med. 19:9, 1956. 4. Platt, W. D., Jr., and Steinberg, I. H.: New England J. Med. 256:823 (May 2) 1957.

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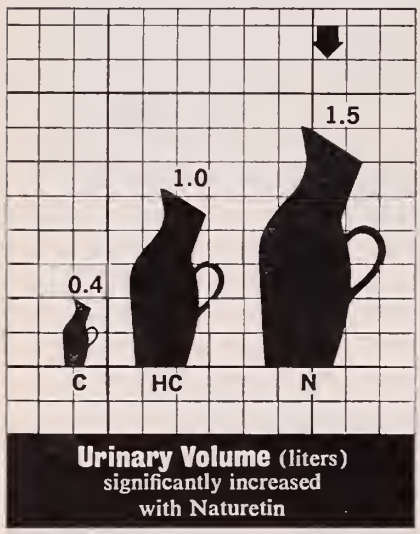
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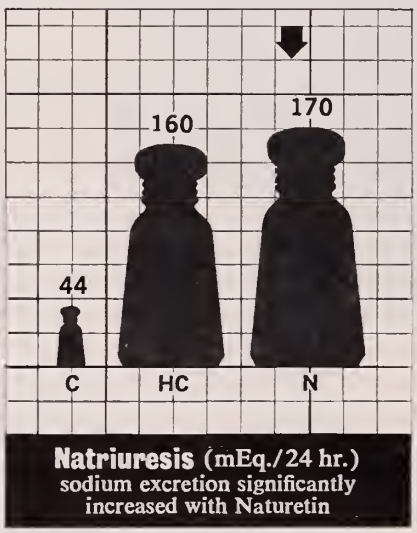
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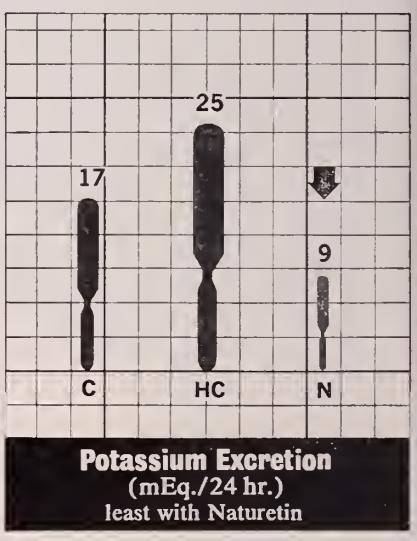
Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin[1]



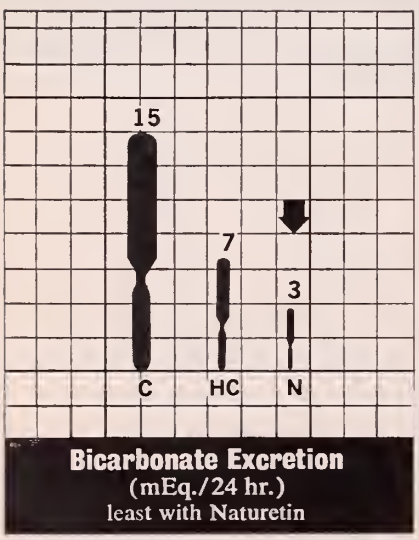
Urinary Volume (liters)
significantly increased
with Naturetin



Natriuresis (mEq./24 hr.)
sodium excretion significantly
increased with Naturetin



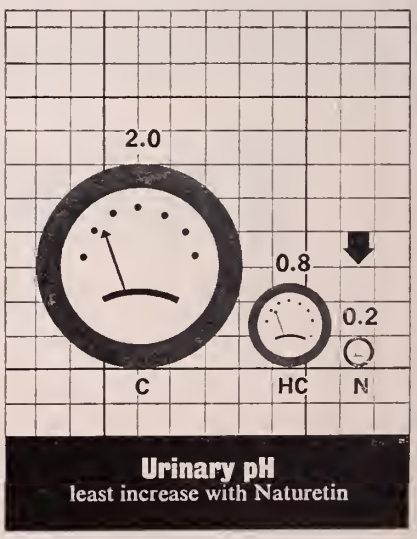
Potassium Excretion
(mEq./24 hr.)
least with Naturetin



Bicarbonate Excretion
(mEq./24 hr.)
least with Naturetin



Chloride Excretion
(mEq./24 hr.)
marked increases



Urinary pH
least increase with Naturetin

Typical Doses: Chlorothiazide – 1,000 mg.; Hydrochlorothiazide – 50 mg.; Naturetin (Benzydroflumethiazide) – 5 mg.

1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959.

A single 5 mg. tablet once a day provides all these advantages[2]

- prolonged action — in excess of 18 hours
- convenient once-a-day dosage
- low daily dosage — more economical for the patient
- no significant alteration in normal electrolyte excretion pattern
- repetitively effective as a diuretic and antihypertensive
- greater potency mg. for mg.—more than 100 times as potent as chlorothiazide
- potency maintained with continued administration
- low toxicity — few side effects — low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other antihypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2]Reports (1959) to the Squibb Institute for Medical Research.

Naturētin —*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

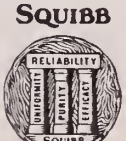
Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin —*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

Naturētin —*Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

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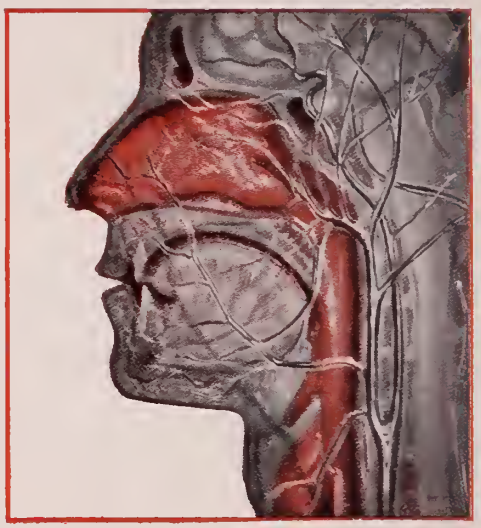


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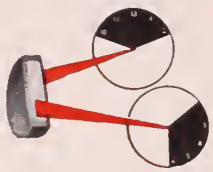
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- in allergic reactions of the upper respiratory tract

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Phenylpropanolamine HCl.....50 mg.
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Pyrilamine maleate.....25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides: ½ the formulation of the Triaminic Tablet.

Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

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Dosage (to be administered every 3 or 4 hours): *Adults* — 1 or 2 tsp.; *Children 6 to 12* — 1 tsp.; *Children 1 to 6* — ½ tsp.; *Children under 1* — ¼ tsp.

1. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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1. Karnaky, K.J.: Med. Record and Annals, Houston 46:296 (Nov. 1952).

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Research information on wine is available on request. Write for your copy of *"Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

---

1. Goetzl, F.R.: Permanente Found. M.Bull. 8:72 (April) 1950.
2. Ogden, E., and Southord, F.D., Jr.: Fed. Proceedings 5:77 (1946)
3. Brooks, H.: Med. J. & Rec. *127*:199 (1928)
4. Hoggard, H.W., and Jellinek, E.M.: Alcohol Explored, New York, Doubledoy, Doran, 1942.



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1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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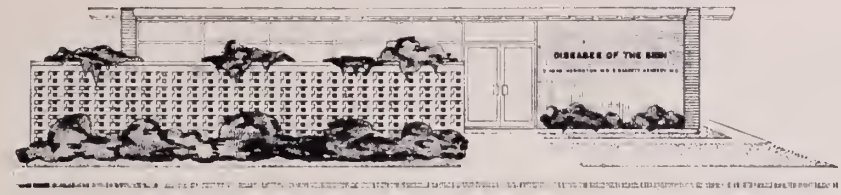
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Heart disease, cancer, strokes and accidents accounted for 71 percent of all deaths in 1958, according to final data on 1958 mortality released today by the Public Health Service's National Office of Vital Statistics.

The 1,647,886 deaths that occurred in 1958 gave the nation a death rate of 9.5 per 1,000 population, compared to a rate of 9.6 in 1957. The number and the rates per 100,000 population for each of the four leading causes of death in 1958 follow:

	Number	*Rate*
Heart disease	637,246	367.9
Malignant neoplasms, or cancer	254,426	146.9
Vascular lesions (chiefly strokes)	190,758	110.1
Accidents, all forms	90,604	52.3
Motor-vehicle accidents	36,981	21.3
All other accidents	53,623	31.0

The death rates for heart disease and cancer in 1958, 367.9 and 146.9 respectively, were slightly lower than the comparable rates in 1957, 369.6 and 148.7. The rate for vascular lesions remained about the same. The death rate for accidents, 52.3, was almost 7 percent lower than the rate of 56.0 in 1957, with the percentage decrease being slightly lower for motor-vehicle accidents than for all other forms of accidents.



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THE FIRST TRUE "TRANQUILAXANT"

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relieves painful muscle spasm and relaxes the patient



Impressive numbers of patients with low back pain and other musculospastic conditions treated with Trancopal have been freed of symptoms and enabled to return to their usual activities, according to newly published clinical reports. In a recent study by Lichtman,[1] Trancopal brought excellent to satisfactory muscle relaxation to 817 of 879 patients. The patients in this group suffered from skeletal muscle spasm associated with low back pain (361 cases), stiff neck (128 cases), bursitis (177 cases), and other skeletal muscle disorders (213 cases). Side effects were rare (2 per cent of patients), and it was not necessary to discontinue medication in any of the patients. Lichtman comments: "Chlormethazanone [Trancopal] not only relieved painful muscle spasm, but allowed the patients to resume their normal activities with no interference in performance of either manual or intellectual tasks."[2]

When you prescribe Trancopal for musculoskeletal disorders, you can confidently expect that your patients will be relieved of the pain and stiffness. You can be sure of their speedy return to everyday work and recreation.

Mullin and Epifano call Trancopal "...a very effective skeletal muscle spasmolytic."[3] They found that Trancopal brought good to excellent relief to all of 39 patients with skeletal muscle spasm related to trauma, bursitis, rheumatoid arthritis, osteoarthritis, and intervertebral disc syndrome. (No side effects were noted except that one patient had slight dryness of the mouth.)

The pattern is similar in every new series reported: Ganz,[4] DeNyse,[5] Shanaphy[6] and Stough.[7]

Trancopal is a true "tranquilaxant"

Trancopal "...combines the properties of tranquilization and skeletal muscle relaxation with no concomitant change in normal consciousness."[6]

Relieves dysmenorrhea



Trancopal not only is valuable in treating patients with low back pain and other musculoskeletal disorders, but is also very effective in bringing relief from menstrual cramps and discomfort. Shanaphy suggests that Trancopal may help the patient by its combination of muscle relaxant and tranquilizing actions, and he finds that "...the continued use of chlormezanone [Trancopal] as a therapeutic agent in dysmenorrhea is advisable."[6] Trancopal was effective in 82 per cent of his series of 50 patients. In another study, which dealt with 52 adolescent girls and 23 women, Stough[7] reported that Trancopal gave complete or moderate relief in 86.4 per cent.

Alleviates tension

And, of course, Trancopal is also very useful in the treatment of patients in anxiety and tension states. As Ganz says, "...a most valuable drug for relieving tension, apprehension and various psychogenic states... allows the patient to use his energies in a more productive manner in overcoming his basic problems."[4]

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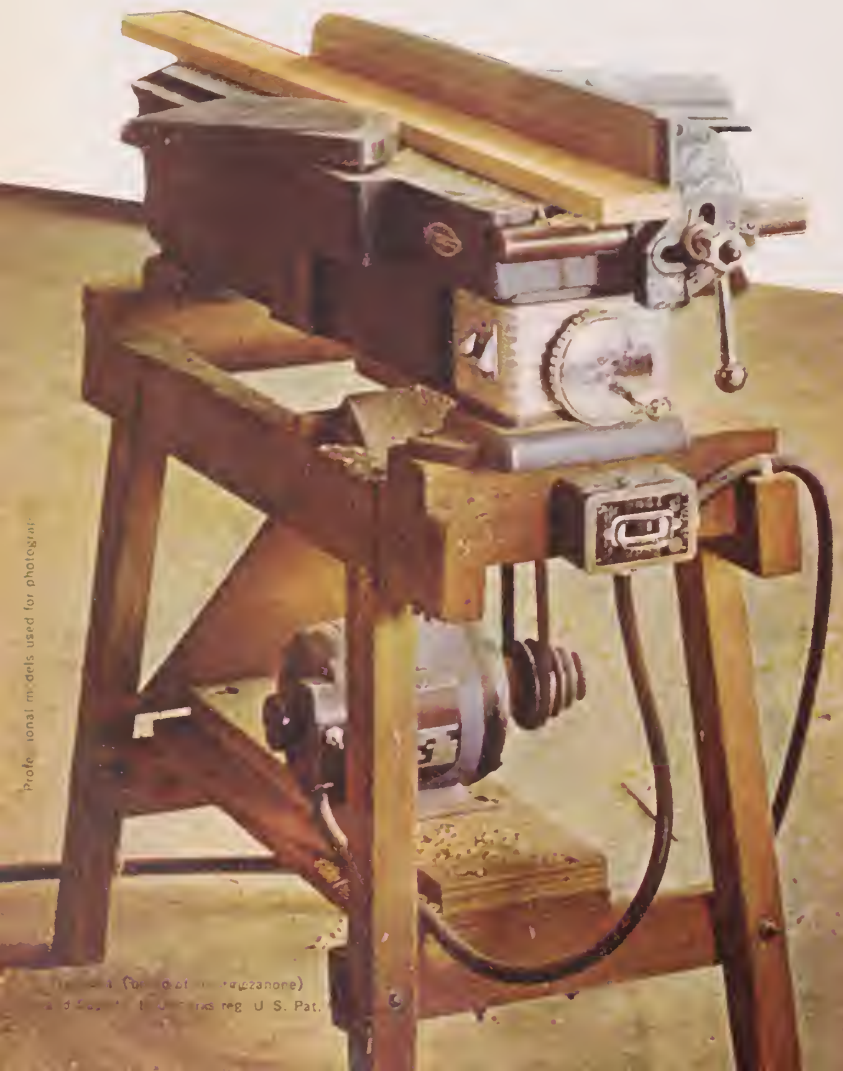
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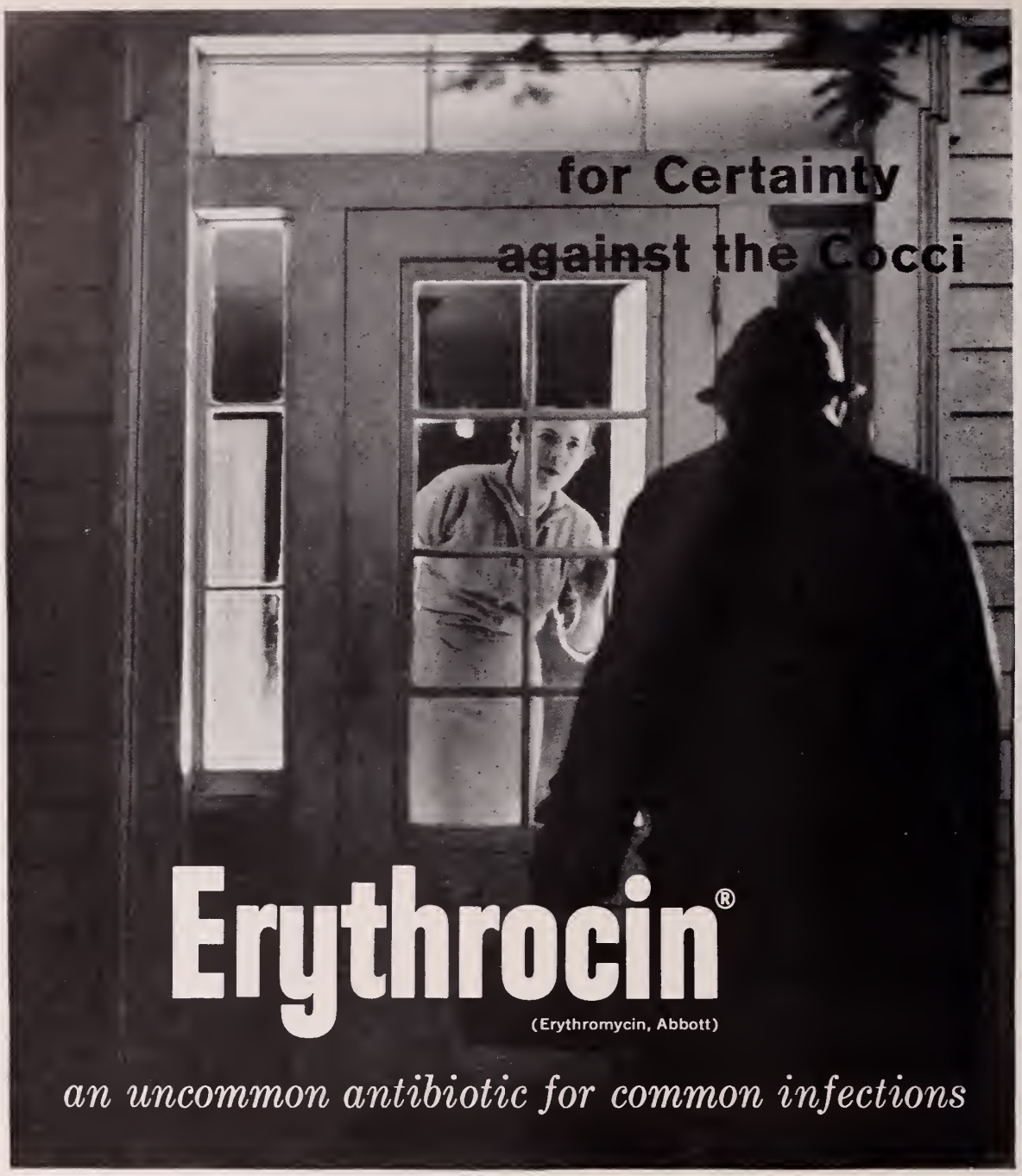
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1. Projection from Vital Statistics, U.S. Government Dept. HEW, Vol. 48, No. 14, 1958, p. 398.
2. Modell, W.: Drugs of Choice 1958-1959, St. Louis, C. V. Mosby Company, 1958, p. 347.

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in the Therapy of

ACUTE PHARYNGITIS, ESPECIALLY WITH LYMPHADENITIS

Ideally, selection of the proper antibiotic for treatment of acute pharyngitis should await the laboratory reports on the susceptibility of the infecting bacteria. But the busy practitioner who sees many patients a day during the upper respiratory infection season may sometimes find it difficult to avoid the empirical choice of an antibiotic. Unfortunately, this practice may sometimes result in therapeutic failure.

No matter what the pressure of the immediate situation, it is worthwhile to consider taking a bacterial specimen from the infected pharynx for culture and sensitivity studies before starting treatment. Thus, a rational basis will be provided for changing the antibiotic should the first choice prove ineffective.

Which Antibiotic?

All other things being equal, the drug of choice is the one to which the pathogen is most susceptible. But if the exigencies of the situation force the physician to a prompt use of antibiotic, a broad-spectrum preparation that produces immediate high blood levels (e.g., tetracycline phosphate complex, TETREX) probably has the best chance of controlling the pathogen.

Later, the laboratory report frequently may indicate that any one of several antibiotic agents would be equally effective against the particular microorganism in question. In such a case other factors such as frequency and severity of side effects, sensitizing potential and toxicity should be considered.

If the acute pharyngitis in question should be due to gram-negative Klebsiella[1], penicillin will be of no value, nor will erythromycin be effective. However, this organism is susceptible to tetracycline. If the pathogen should turn out to be gram-positive Streptococcus or Staphylococcus, then penicillin, erythromycin, and tetracycline may all be effective against it.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reactions. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

The tetracyclines (e.g., TETREX) have the advantages of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

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Streptococcus; Staphylococcus; Pneumococcus; Gonococcus; Meningococcus; *C. diphtheriae; B. anthracis; E. coli;* Proteus: *A. aerogenes; K. pneumoniae;* Shigella; Brucella; *P. tularensis; H. influenzae; T. pallidum;* Rickettsiae; Viruses of psittacosis and ornithosis, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica; D. granulomatosis.*

[a] Some strains are not susceptible.

[b] Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics, 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

High blood, body fluid, and tissue levels of active drug are quickly attained when the new phosphate preparation of tetracycline (TETREX) is used.

The semisynthetic tetracyclines have been in constant use since they were introduced in 1952. They have been proved clinically and have established themselves as safe, effective, and valuable antibiotic agents. But the final decision, the choice of agent, and the control of therapy must remain where it has always been, in the hands of the individual physician.

References: 1. Zinsser, H.: A Textbook of Bacteriology. 11th edition, New York, Appleton-Century-Crofts, 1957, p. 409. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (December) 1957.

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Kuge, T.: Submitted for publication.

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Wein, A. B.: The Use of Carisoprodol in Orthopedic Surgery and Rehabilitation. Proceedings of the Symposium on The Pharmacology and Clinical Usefulness of Carisoprodol. Wayne State University Press, Detroit, 1959, p. 156.

In a double-blind study, SOMA was reported to be "clinically effective to a highly significant degree." (92 patients.)
Cooper, C. D., and Epstein, J. H.: The Clinical Evaluation of Carisoprodol by a double-blind technique. Ibid. p. 97.

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MARCH, 1960

Published Monthly
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Pulmonary Function Studies*

• The value of these studies is thoroughly explained, together with their limitations. The author gives eight illustrative case histories.

P. R. GILMER, M. D.
Shreveport

IF the definition of pulmonary function studies appears involved, still more challenging is the interpretation of the findings elicited. Pulmonary function studies are no more no less than the title implies. Briefly, they constitute a series of specialized tests calculated to evaluate the three prime functions of the lungs.

1. Ventilation
2. Diffusion
3. Pulmonary capillary blood flow.

By various charts made available through years of research by pulmonary physiologists, fairly accurate and accepted normal values have been determined for the various age, sex, height, and weight groups. With these values already established, a deviation therefrom calls for explanation. Having defined lung function studies let us now briefly review what they can and cannot do toward making a diagnosis.

What Pulmonary Function Tests Can Do

1. Provide the information needed for an objective appraisal of pulmonary impairment, insufficiency or disability when interpreted in relation to the other findings in the patient. Extensive involvement of the lungs seen in x-ray shadows may be associated with little or no pulmonary impairment while others with little roentgenological evidence of disease may have true pulmonary disability.

2. Useful in ruling out pulmonary disease in nonorganic types of dyspnea such as psychoneurosis, neurocirculatory aesthenia.

3. May provide quantitative measure of pulmonary function which can aid in the evaluation of candidates for permanent forms of collapse therapy or surgical removal of the lung tissue, both so far as immediate risk and ultimate useful existence are concerned.

4. May aid in following objectively certain aspects of the course of pulmonary disease.

5. May permit evaluation of therapeutic measures, medical or surgical.

6. Aid in differentiating primary from secondary types of polycythemia.

7. Aid in differentiating cardiac from pulmonary disease.

8. Occasionally permit detection of pulmonary abnormalities in patients in whom physical examination and x-ray

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, May 5, 1959, in New Orleans.

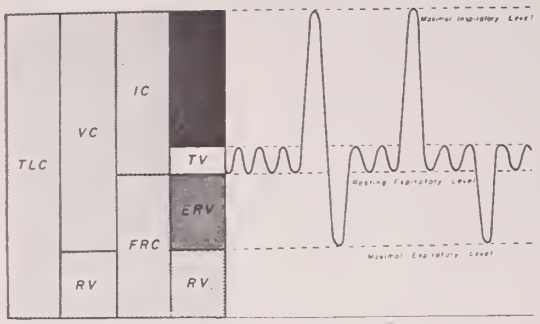


Figure 1.—Lung volumes as they appear on a spirographic tracing. Taken from "The Lung" by Comroe, Forster, Dubois, Briscoe, Carlsen, Year Book Publishers, Chicago, Illinois. (Reproduced with permission of the author and the publisher.)

studies cannot disclose certain diseases of the lung.

9. May be useful in pre-employment evaluation.

10. Aid in evaluating disability claims in insurance or industrial practice.

11. Pulmonary function studies indicate the specific function of the lung that has been impaired by disease and give the physician a clearer concept of the disease process in each patient.

What Pulmonary Function Tests Cannot Do

1. Cannot provide etiological or anatomical diagnoses but only physiological diagnoses, estimates of functional capacity, and sometimes, information of prognostic import.

2. Cannot demonstrate the definite location of a process: Thus certain tests might reveal the existence of a venous-arterial shunt but in themselves fail to identify it as intracardial or intrapulmonic.

3. Cannot distinguish between processes producing certain effects; for example, impaired diffusion across the alveolo-capillary membrane might be demonstrated but without distinguishing between alveolar edema and interstitial edema.

4. Cannot reveal pulmonary disease unless function is impaired and then only when impairment is of sufficient degree that present tests can recognize with certainty the deviation from normal values; thus slight reduction in function cannot be detected or involvement of small areas only.

5. Localized disease produces changes only when so much space is occupied or the lesion is strategically situated so that function is affected. As with other parenchymatous organs, diffuse disease is far more likely to impair function than localized lesions.

6. Cannot supplant careful analysis of the history, physical examination, fluoroscopic, and other radiological examinations, bacteriological or pathological studies.

7. No single test now known is sufficient for evaluation of all aspects of pulmonary function.

8. At present sufficient data have not been obtained upon large enough groups of *healthy* persons to determine with certainty what constitutes normal values for pulmonary function in men and women of all age groups and what values represent an irreducible minimum below which patients cannot live in comfort.

Mechanics of Breathing

Perhaps the next consideration should be given to a short review of the normal mechanics of breathing. Throughout this entire discussion three of the fundamental laws of gases must be kept in mind, viz.:

1. "All gases flow from an area of higher pressure to one of lower pressure."

2. The pressure exerted by gases varies in inverse proportion to the space occupied. In other words, the larger the space the gas occupies, the *lower* the pressure it exerts.

3. The difference in partial pressures of gases comprising atmospheric air and in the circulating blood make possible the interchange of oxygen and carbon dioxide.

Hence, the *one fundamental* law of gases flowing from a higher to a lower pressure is the keynote to the understanding of lung physiology.

Dalton's Law

Dalton's law of partial pressures is one of the most significant laws to be

discussed, because from now on frequent reference will be made to the partial pressure of the gases in the air and in the blood. The law of partial pressure states that in any mixture of gases each gas behaves as though it were the only one there, and exerts the same pressure (called its "partial pressure") which it would ordinarily exert if it were alone in the container.

The atmosphere exerts a pressure of 760 mm. Hg. at sea level and is composed of oxygen (20.96 per cent), Carbon dioxide (0.04 per cent) and nitrogen (79.0 per cent).

The partial pressure of oxygen gas, therefore is

$\frac{20.96}{100} \times 760$, or 159.2 mm. Hg.* for carbon dioxide,

$\frac{0.04}{100} \times 760$, of 0.30 mm. Hg.: and for nitrogen,

$\frac{79.0}{100} \times 760$, or 600.4 mm. Hg.

It is generally accepted that partial pressures of alveolar gases are practically identical with arterial partial pressures.

Inspiration and Expiration

In the process of normal breathing, purely from a ventilatory standpoint, just what takes place upon—

1. Inspiration
2. Expiration

This function is easily performed and does not require excess work. Any alteration of these various factors affects the ventilatory function of the lungs, such as,

1. A break in the pleural seal.
2. A fusion of the pleurae.
3. Paralysis of one leaf of the diaphragm.
4. Neurogenic factors associated with bulbar polio.
5. Impairment of normal elasticity of bronchi, alveoli and chest wall.

Some of these abnormalities may be obvious. Others require pulmonary function studies of various extent to establish. The studies become valuable from a quantitative standpoint.

* Not corrected for water vapor.

Diffusion

In the process of breathing from a purely "diffusion" standpoint what takes place in the *normal* individual?

1. Adequate ventilation of each alveolus.
2. Lack of obstruction of the bronchiole leading to each alveolus.
3. Good elasticity of each alveolus.
4. Lack of fluid or exudate in alveolus.
5. Free mixing of alveolar gas.
6. Thin alveolar membrane.
7. Normal partial pressures of O_2 and CO_2 in each alveolus.
8. Adequate perfusion of each alveolus with blood.

Any variation from the normal as shown above, results in inadequate diffusion.

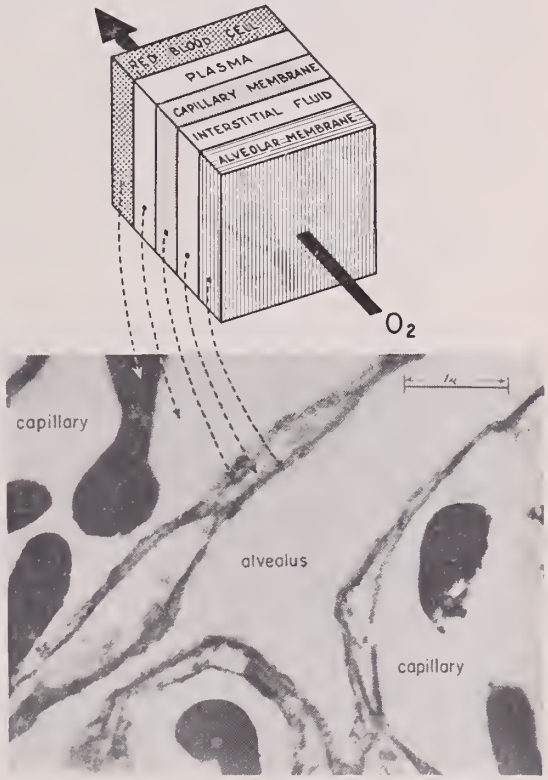


Figure 2.—Electron microscope photograph of rat lung. The photograph (x20,000) illustrates clearly the tissues through which oxygen must pass from the gas phase in the alveolus until it combines with hemoglobin within the red blood cell. No attempt has been made in the schema to portray relative thickness of the different tissues. (Photograph from Low, F. N., Anat. Rec. 117:241, 1953, which appears as Figure 29 in "The Lung" by Julius H. Comroe, Jr., Year Book Publishers, Inc., Chicago, Ill. Reprinted with the permission of the author and the publisher.)

Respiratory Center

While the anatomical location of the respiratory center is generally thought to be in the medulla, yet no definite proof exists.

There are, however two accessory chemoreceptors that act as respiratory centers under certain conditions.

These chemoreceptors are located respectively on the arch of the aorta and at the bifurcation of the carotids.

They are known as the aortic and carotid bodies—and when the respiratory center has become dulled by too much CO_2 and a consequent decrease in O_2, this decreased O_2 stimulates respiration by its action on these chemoreceptors.

The use of O_2 in respiratory acidosis must be carefully supervised.

Pulmonary Capillary Blood Flow

The third factor in *normal* breathing relates to pulmonary capillary blood flow and it must be:

1. Adequate in volume.
2. Distributed evenly.
3. Not under undue pressure.

Summary of Three Factors

In summarizing the three factors involved in *normal* breathing it becomes evident that:

1. Sufficient volume of gas (air) must reach each alveolus.

2. There must be no impediment of passage of gas from alveolus to pulmonary capillary bed.

3. There must be adequate perfusion of the alveoli, without increased pressure.

Pulmonary function studies are devised to ferret out, if possible, any deviation from normal and assess a quantitative value of such deviation.

Case Reports

Case No. 1.—Mrs. M. S.C., a white, female, age 63, had radical left mastectomy five years ago. Repeated thorough check-ups did not reveal metastases.

The Problem: For the past three years, became progressively worse, marked changes in personality, emotional instability, severe headaches, vomiting and lethargy to the point of falling asleep during a conversation.



Figure 3.—X-ray of chest, Case No. 1, Mrs. M. S. C.

Examination: Pulmonary function studies showed a marked decrease in all volumes and capacities. Especially apparent was decreased O_2 consumption, which did not improve when placed on pure O_2.

Bronchodilators of no help in increasing volumes or capacities.

Impression: Marked hypoventilation, probably due to excess CO_2 retention and corresponding "dulling" of respiratory center in medulla.

Treatment: Hyperventilation with compressed air by use of Bird, Mark 7. I. P. P. B. valve for twenty minutes.

Immediately following this treatment, a recheck of function studies showed a marked increase in all ventilatory and capacity amounts, together with a normal consumption of O_2 from room air.

Patient has marked decrease of compliance due to mastectomy on left and intensive deep x-ray therapy. This side is practically splinted. Left diaphragm almost completely paralyzed. A stooped kyphotic posture, increasing the A. P., diameter of chest, further contributes to hypoventilation.

Appropriate brace to insure good posture and daily use of I. P. P. B. until good habits of posture and ventilation are established.

Latest follow-up information to the effect patient is doing fine with marked improvement of presenting symptoms.

The thought occurs that this is a more frequent sequela of radical breast surgery than formerly appreciated.

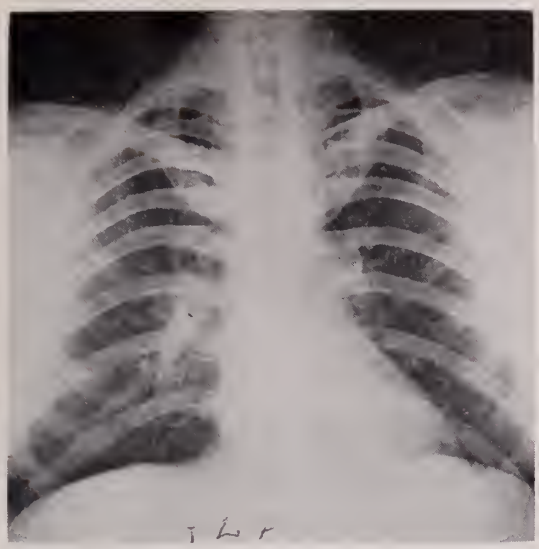


Figure 4.—X-ray of chest, Case No. 2, Mr. J. L. P., April 11, 1959.

Arterial blood studies for CO_2 retention, not available at time of this examination. To be made available in near future.

Case No. 2.—Mr. J. L. P.

Chief Complaint: Cough, expectoration and difficult breathing.

Present Illness: This patient, in great detail, recited a history of onset in 1952 with progressive worsening. He was a painter by trade and stated his condition was better in the fall and during cold weather. He stopped painting in 1956 and drove a moving van all over the country. During this time thought he was better. In 1957 resumed his former trade of painting and shortly thereafter began to cough and have recurrence of difficult breathing. Was told this was an allergic reaction. Had severe emotional strain last year and suffered same symptoms. Has gone to many doctors, had various treatments without marked improvement.

Past history and system review noncontributory.

Physical Examination: Physical examination of chest revealed a few expiratory wheezes which cleared promptly on cough. Breath sounds of good quality and good, equal bilateral expansion. Heart regular in rate and rhythm and no murmurs heard.

TABLE 1
LUNG VOLUMES

NAME: Mr. James L. P.; Sex M, age 40; Weight 187½, Kilograms 82; Height 5′ 7¾″, Centimeters, 173; B.S.A. 1.96

	APRIL 11, 1959		APRIL 18, 1959	
	Results	Normal Predicted	Results	Normal Predicted
1. Tidal Volume	1050	500 cc	510	500 cc
2. Minute Volume	14.700	5500-7000	6630	5500-7000
3. Alveolar Ventilation	12.600	3800-4900	4680	3800-4900
4. Inspiratory Reserve	2040		2700	
5. Expiratory Reserve	420		750	
		4.85 Collins		Collins
6. VITAL CAPACITY	3.690	3.90 Baldwin	3.96	Baldwin
7. Respiratory Rate	14	11-14/min	13	11-14/min
8. Oxygen Consumption	300	300 cc	300	300 cc
9. M. B. C. Rate	52	40-70/min	48	40-70/min
10. M. B. C.	108,000	130,000	105,600	
11. TIMED				
1st Second	3030	83% of V. C.		83% of V. C.
2nd Second	3360	94% of V. C.		94% of V. C.
3rd Second	3.410	97% of V. C.		97% of V. C.
12. Residual Volume	1066			25% of T. L. C.
13. Functional Residual C.	1486			
14. Total Lung Capacity	4756			
15. RV/T. L. C.	23%			
16. Cal/M²/Hr.				
17. B. M. R.				
GAS ANALYSIS				
18. O_2 Expired Air	14.5	15.4%	15.1	15.4%
19. CO_2 Expired Air	3.5	5.6%	4.7	5.6%
Dead Space of Machine				

All tests made in the sitting position.



Figure 5.—X-ray of chest, Case No. 3, Mr. T. W. B., March 26, 1959.

X-ray of chest disclosed no abnormality.

Fluoroscopic examination revealed equal bilateral expansion with full, free excursions of both leaves of diaphragm.

Pulmonary Function Studies revealed marked hyperventilation with no other significant findings. (Table 1)

He was placed on compazine spansules 10 mg. a.m. and p.m. for one week, and a recheck of function showed it had returned to a normal status. Stated he felt fine and had no complaint.

Conclusion: Hyperventilation due to emotional instability.

Case No. 3.—Mr. T. W. B. This patient referred by Welfare for confirmation of diagnosis made by x-ray of grade IV emphysema. The only data at hand was statement by patient that he was markedly short of breath.

Lung function studies (Table 2) disclosed an entirely normal ventilatory function and fluoroscopy revealed free and full excursions of both leaves of the diaphragm.

Conclusion: X-ray alone (Figure 5) not always reliable in diagnosing emphysema.

Case No. 4.—Mrs. E. B. M.

Chief Complaint: Chronic cough for many years. Shortness of breath.

Present Illness: The pertinent facts of this history are those of chronic bronchitis over many

TABLE 2
LUNG VOLUMES

Name: Mr. T. W. B.; Sex M, age 58; Date 4/9/59; Weight 143¾, Kilograms 64; Height 5' 9", Centimeters 175; B.S.A. 1.82

	Results	Normal Predicted	Per Cent of Normal
1. Tidal Volume	480	500 cc	
2. Minute Volume	7680	5500-7000	
3. Alveolar Ventilation	5600	3800-4900	
4. Inspiratory Reserve	2370		
5. Expiratory Reserve	1590		
		4.45 Collins	
6. VITAL CAPACITY	4.440	3.79 Baldwin	Normal
7. Respiratory Rate	16	11-14/min	
8. Oxygen Consumption	270	300 cc	
9. M. B. C. Rate	69	40-70/min	
10. M. B. C.	74,700	108,000	69
11. TIMED		4180	
1st Second	3300	83% of V. C.	79%
2nd Second	3940	94% of V. C.	94%
3rd Second	4180	97% of V. C.	100%
12. Residual Volume	1610		
13. Functional Residual C.	3200		
14. Total Lung Capacity	6050		
15. RV/T. L. C.	27%		
16. Cal/M^2/Hr.	42		
17. B. M. R.	Plus 2		
GAS ANALYSIS			
18. O_2 Expired Air	15.4	15.4%	
19. CO_2 Expired Air	4.5	5.6%	
Dead Space of Machine	5400		
All tests made in the sitting position.	Sitting position—Godart Machine		



Figure 6.—X-ray of chest, Case No. 4, Mrs. E. B. M., March 31, 1959.

years, with progressive shortness of breath. At the time of examination this latter symptom was embarrassing to the point of interfering with her occupation.

Past History and system review noncontributory.

Physical Examination: Chest revealed numerous moderately coarse and "bubbling" rales throughout both lungs. Upon voluntary coughing, showers of these rales were heard and sputum was raised easily. Heart normal in rate and rhythm and no murmurs heard.

X-ray of chest (Figure 6) revealed fairly normal lung fields with heart and mediastinal shadows within normal limits and position.

Fluoroscopic findings showed sluggish action of both leaves of the diaphragm.

Pulmonary Function Studies (Table 4) were significant with regard to low tidal volume, marked decrease in vital capacity as well as maximum breathing capacity. Timed vital capacity within normal limits. Reserve volume with relation to total lung capacity greatly increased. An immediate response was obtained by use of intermittent positive pressure breathing using Vaponefrin and Alevaire—as shown by a recheck of function at that time.

Conclusion: While this case cannot be classi-

TABLE 4
LUNG VOLUMES
NAME: Mrs. E. B. M.; Sex F, age 62; Weight 113, Kilograms 52; Height 5′ 3″, Centimeters 161; B.S.A. 1.52

	MARCH 31, 1959		APRIL 13, 1959	
	Results	Normal Predicted	Results	Normal Predicted
1. Tidal Volume	390	500 cc	450	500 cc
2. Minute Volume	8190	5500-7000	9450	5500-7000
3. Alveolar Ventilation	5040	3800-4900	6300	3800-4900
4. Inspiratory Reserve	1020		1350	
5. Expiratory Reserve	150		420	
		2.95 Collins		2.95 Collins
6. VITAL CAPACITY	1.560	2.49 Baldwins	2.220	2.49 Baldwins
7. Respiratory Rate	21	11-14/min	21	11-14/min
8. Oxygen Consumption	240	300 cc	270	300 cc
9. M. B. C. Rate	48	40-70/min	60	40-70/min
10. M. B. C.	15,600	64,000	30,600	64,000
11. TIMED				
1st Second	750	83% of V. C.	870	83% of V. C.
2nd Second	1050	94% of V. C.	1260	94% of V. C.
3rd Second	1260	97% of V. C.	1470	97% of V. C.
12. Residual Volume	2945	25% of T. L. C.	2380	25% of T. L. C.
13. Functional Residual C.	3095		2800	
14. Total Lung Capacity	4506		4600	
15. RV/T. L. C.	65%		52%	
16. Cal/M^2/Hr.				
17. B. M. R.				
GAS ANALYSIS				
18. O_2 Expired Air	15.9	15.4%	15.9	15.4%
19. CO_2 Expired Air	5.	5.6%	5.	5.6%
Dead Space of Machine				

All tests made in the sitting position.

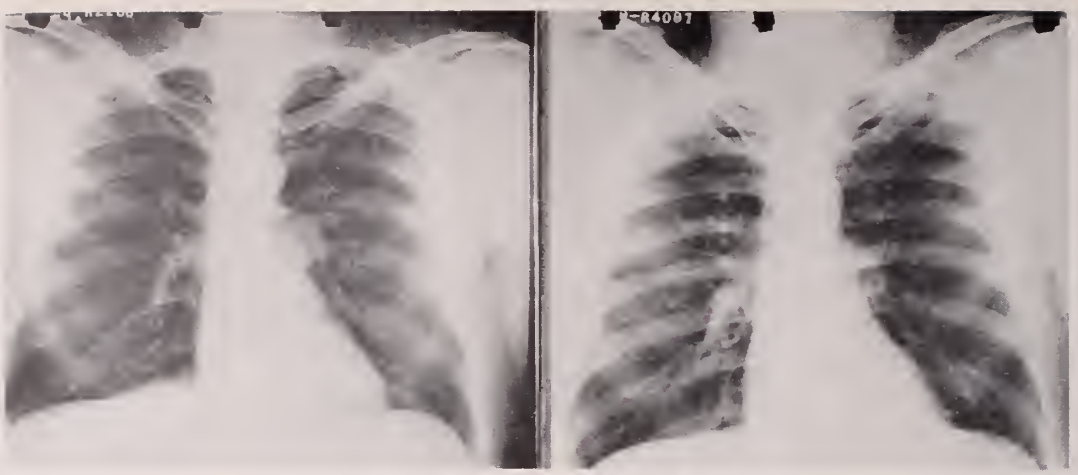


Figure 7.—Comparative films on chest of Case No. 5, W. W. E., January 18, 1955, and March 30, 1959.

fied as a true emphysema, certainly it must be recognized as a pre-emphysemic state. It is generally recognized that chronic bronchitis—over a long period of years—almost inevitably leads to true emphysema with loss of elasticity of the alveolar walls, rupture of alveolar walls and loss of pulmonary capillary circulation.

This condition was readily reversible when patient was placed on appropriate therapy of I. P. P. B.—antibiotics etc. as shown by recheck of function some ten to twelve days later.

Case No. 5.—Mr. W. W. E. This patient was

TABLE 5
LUNG VOLUMES

NAME: Mr. W. W. E.; Sex M, age 47; Weight 145, Kilograms 66; Height 5' 7", Centimeters 170; B.S.A. 1.78

	MARCH 30, 1959		APRIL 17, 1959	
	Results	Normal Predicted	Results	Normal Predicted
1. Tidal Volume	450	500 cc	510	500 cc
2. Minute Volume	7200	5500-7000	6630	5500-7000
3. Alveolar Ventilation	4800	3800-4900	4680	3800-4900
4. Inspiratory Reserve	570		960	
5. Expiratory Reserve	300		360	
		4.40 Collins		4.40 Collins
6. VITAL CAPACITY	1.320	3.83 Baldwin	1.830	3.83 Baldwin
7. Respiratory Rate	16	11-14/min	13	11-14/min
8. Oxygen Consumption	240-270	300 cc	300	300 cc
9. M. B. C. Rate		40-70/min		40-70/min
10. M. B. C.	10,800	109,000	15,600	109,000
11. TIMED				
1st Second	450	83% of V. C.	420	83% of V. C.
2nd Second	720	94% of V. C.	600	94% of V. C.
3rd Second	930	97% of V. C.	750	97% of V. C.
12. Residual Volume				25% of T. L. C.
13. Functional Residual C.				
14. Total Lung Capacity				
15. RV/T. L. C.				
16. Cal/M^2/Hr.				
17. B. M. R.				
GAS ANALYSIS				
18. O_2 Expired Air	17.4	15.4%	17.4	15.4%
19. CO_2 Expired Air	5.6	5.6%	5.6 to 7	5.6%
Dead Space of Machine				

All tests made in the sitting position.



Figure 8.—Comparative films on Case No. 6, Mr. J. F. W., before surgical resection, January 9, 1959, and after, April 16, 1959.

diagnosed as chronic obstructive emphysema grade IV by me in 1955. At that time no function studies were done, nor did I have a definite, clear-cut approach to treatment.

Upon his readmission to the Gilmer Hospital on March 30, 1959, lung function studies were done which are shown on the chart. (Table 5)

He was placed on an intensive treatment of alevaire inhalation, together with I. P. P. B. employing broncho-dilators, and appropriate antibiotics. His response has been good as shown by the comparative lung function studies. (Table 5)

TABLE 6
LUNG VOLUMES

NAME: Mr. J. F. W.; Sex M, age 63; Weight 165, Kilograms 75; Height 5' 11", Centimeters 180; B.S.A. 1.94

	JANUARY 10, 1959		APRIL 16, 1959	
	Results	Normal Predicted	Results	Normal Predicted
1. Tidal Volume	1290	500 cc	990	500 cc
2. Minute Volume	29.850	5500-7000	14.850	5500-7000
3. Alveolar Ventilation	17.100	3800-4900	12.600	3800-4900
4. Inspiratory Reserve	2580		1740	
5. Expiratory Reserve	900		1170	
		4.85 Collins		4.85 Collins
6. VITAL CAPACITY	4.770	4.02 Baldwin	3900	4.02 Baldwin
7. Respiratory Rate	15	11-14/min	15	11-14/min
8. Oxygen Consumption	330	300 cc	330	300 cc
9. M. B. C. Rate	45	40-70/min	40	40-70/min
10. M. B. C.	85,500	105,000	66,000	105,000
11. TIMED				
1st Second	3030	83% of V. C.	2370	83% of V. C.
2nd Second	3840	94% of V. C.	2880	94% of V. C.
3rd Second	4140	97% of V. C.	3180	97% of V. C.
12. Residual Volume	1635		1448	25% of T. L. C.
13. Functional Residual C.	2535		2618	
14. Total Lung Capacity	6405		5348	
15. RV/T. L. C.	26%		27%	
16. Cal/M^2/Hr.	48			
17. B. M. R.	Plus 35			
GAS ANALYSIS				
18. O_2 Expired Air	16.9	15.4%	15.5	15.4%
19. CO_2 Expired Air	3.7	5.6%	4.4	5.6%

Dead Space of Machine

All tests made in the sitting position.

Case No. 6.—Mr. J. F. W. This patient was sent for pulmonary function studies for evaluation in contemplated lung surgery. A lesion was present in the left lung, and although not proven, it was judged to be carcinoma. He had previously been treated for active pulmonary tuberculosis in the left lung and had been on an inactive status several years.

Overall function was considered good as reflected by adequate vital capacity, maximum breathing capacity and timed vital capacity. His reserve volume with relation to his total lung capacity was well within normal limits.

The excessively increased minute volume was attributed to uneven ventilation. In other words, in order to satisfy his oxygen need he had to exchange larger than normal amounts of gas—much of which entered aveoli having poor or no vascularity and other portions of the gas going to poorly ventilated alveoli with good vascularity. By surgical excision of this area, his minute volume should decrease.

Comparative studies made since surgery (lobectomy) reflected the improvement anticipated. His overall function was better and the work of breathing reduced. The lesion proved to be primary, bronchogenic carcinoma, squamous type.



Figure 9.—X-ray of chest, Case No. 7, Mr. R. W. B.

Case No. 7.—Mr. R. B. This was an industrial problem. This 39 year old white man was exposed to the fumes of anhydrous ammonia over a rather long period of time. A pipe carrying the chemical broke and his clothes were saturated with ammonia. The fumes had an immediate corrosive

TABLE 7
LUNG VOLUMES

NAME: Mr. R. B.; Sex M, age 39; Date 2/12/59; Weight 181½, Kilograms 83; Height 6', Centimeters 175; B.S.A. 2.04

	Results	Normal Predicted	Per Cent of Normal
1. Tidal Volume	450	500 cc	90%
2. Minute Volume	8550	5500-7000	
3. Alveolar Ventilation	5700	3800-4900	
4. Inspiratory Reserve	3360		
5. Expiratory Reserve	600		
		4.95 Collins	
6. VITAL CAPACITY	4.410	4.12 Balwins	97%
7. Respiratory Rate	19-20	11-14/min	
8. Oxygen Consumption	270	300 cc	90%
9. M. B. C. Rate		40-70/min	
10. M. B. C.	108,000	136,000	80%
11. TIMED			
1st Second	3450	83% of V. C.	78%
2nd Second	4050	94% of V. C.	92%
3rd Second		97% of V. C.	
12. Residual Volume	3154		
13. Functional Residual C.	3754		
14. Total Lung Capacity	7.564		
15. RV/T. L. C.	39+%		
16. Cal/M^2/Hr.	38		
17. B. M. R.	0		
GAS ANALYSIS			
18. O_2 Expired Air	16.1	15.4%	
19. CO_2 Expired Air	4.9	5.6	
Dead Space of Machine			

All tests made in the sitting position.

effect on the mucous membrane of the oral, pharyngeal and laryngeal cavities. He experienced marked edema of the larynx and felt as though he were choking. Emergency measures brought temporary relief and several days later sloughing of the affected membranes occurred.

He resumed work and apparently was all right until some six weeks later when intractible dry cough and fever developed. He was hospitalized and given various antibiotics and gradually symptoms disappeared. During this attack he complained of a burning sensation in both lungs—and was told he had rales in his chest.

Patient was sent in for pulmonary function studies and evaluation of disability, if such was found.

Physical examination of the chest revealed good and equal bilateral expansion. The breath sounds were clear and no rales were heard. Fluoroscopic examination showed normal excursions of the diaphragms and good illumination of both lungs.

Pulmonary Function studies revealed good overall function as shown by normal Vital Capacity, normal Maximum Breathing Capacity, as well as Timed Vital Capacity. The Residual Volume is within normal limits. There is some evidence of uneven distribution as shown by increased Minute Volume. (Table 7)

Comment: The tissues of the upper respiratory tract responded characteristically and promptly to the insult of the irritant gas. There being considerable moisture at these sites ammonium hydroxide was formed immediately and exerted its corrosive effect. Apparently no permanent damage done here.

As the gas passed down the tracheo-bronchial tree and into the terminal bronchioles and alveoli, it was less concentrated and the area less moist than in the upper respiratory tract.

The reaction here was less severe and did not manifest itself for some time after the exposure. Its presence became evident with the attack of coughing, burning etc. which caused the patient to again seek medical treatment.

Conclusion: As far as can be detected at this time, no damage of significant extent can be demonstrated as a result of this exposure.

Case No. 8.—Mr. T. L., age 71, white male. Left pneumonectomy for squamous cell carcinoma performed June 1953.

Here again no problem is present. The patient is comfortable and enjoying life compatible with his age. Although a lung may become hyperinflated in a compensatory manner, yet this fact per se does not necessarily indicate pulmonary insufficiency.

Pulmonary function studies on the remaining "hyperinflated" right lung are given in Table 8.

In comparing these values with the predicted values for both lungs, it becomes readily apparent that the right lung alone is performing adequately as to ventilation, capacities and O_2 consumption.

It has been held in the past that a hyperinflated lung was lacking in actual function—i.e.—normal exchange of O_2 and CO_2 as well as deficiencies in ventilation. This case is cited merely to refute the old concept.

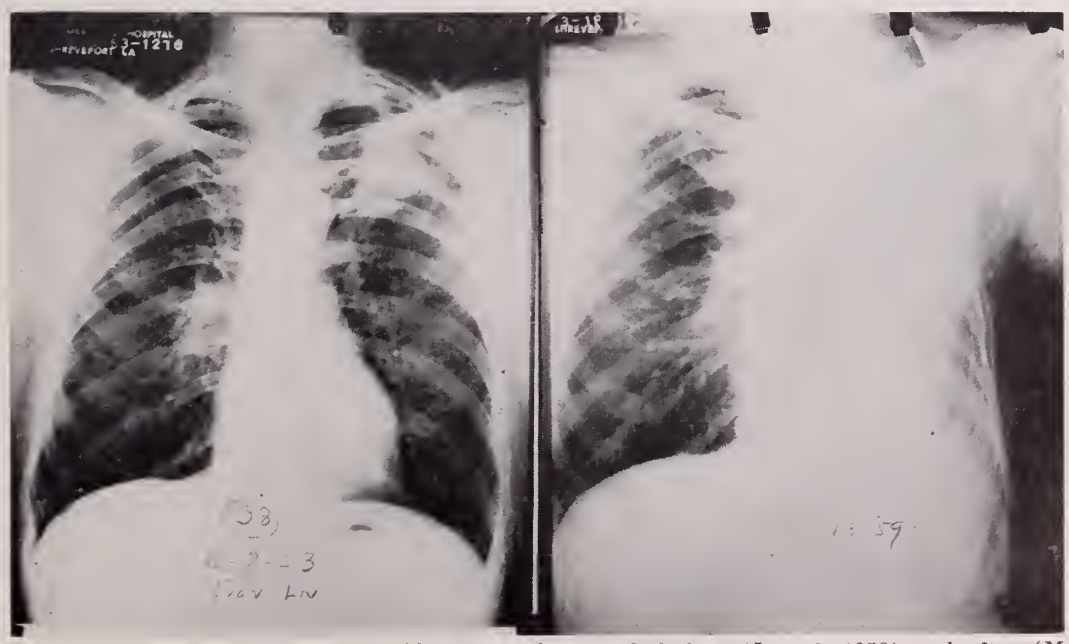


Figure 10.—Case No. 8, Mr. T. L. X-rays of chest made before (June 8, 1953) and after (March 18, 1959) left pneumonectomy for squamous cell carcinoma.

TABLE 8
LUNG VOLUMES

NAME: Mr. T. L.; Sex M, age 71

	Results	Normal Predicted
1. Tidal Volume	510	500 cc
2. Minute Volume		5500-7000
3. Alveolar Ventilation		3800-4900
4. Inspiratory Reserve	810	
5. Expiratory Reserve	210	
6. VITAL CAPACITY	1.530	Collins Baldwin
7. Respiratory Rate		11-14/min
8. Oxygen Consumption		300 cc
9. M. B. C. Rate		40-70/min
10. M. B. C.	2610	
11. TIMED		
1st Second	640	83% of V. C.
2nd Second	300	94% of V. C.
3rd Second	90	97% of V. C.
12. Residual Volume		25% of T. L. C.
13. Functional Residual C.		
14. Total Lung Capacity		
15. RV/T. L. C.		
16. Cal/M^2/Hr.		
17. B. M. R.		
GAS ANALYSIS		
18. O_2 Expired Air		15.4%
19. CO_2 Expired Air		5.6%
Dead Space of Machine		

All tests made in the sitting position. Complete studies not done.

Summary and Conclusions

A brief outline of the principles of pulmonary physiology has been presented. No attempt has been made in this presentation to explore the more complicated and highly technical fields of blood-gas exchanges, specific diffusion studies or partial pressures of CO_2 and O_2.

This paper is presented with the thought of stimulating more interest in this important field and to show that many of the simpler tests may be performed in the physicians office with rewarding information. With this in mind the above series of cases was chosen.

Diagnosis and Management of Cor Pulmonale*

• In cor pulmonale there are many definitions, sometimes few symptoms, and all aids may have to be used in diagnosis. Response to therapy is in proportion to the reversibility of the underlying physiological causes.

JAMES W. WADE III, M. D.
CYRIL T. YANCEY, M. D.
Monroe

THE literature abounds with different interpretations of cor pulmonale. Dr. Paul White apparently introduced the term in 1931, but interchangeably used "emphysema heart". Approximately twenty-six years later Fishman and Richards defined cor pulmonale as "a heart which manifests dilatation, hypertrophy, or failure secondary to intrinsic diseases of the lung". A short time later George G. Griffith elaborated on the above and subdivided the term into two groups:

A. Primary cor pulmonale—pulmonary hypertension as the basic lesion.

B. Secondary cor pulmonale—due to lesions of the left side of the heart.[7]

The basic factor in the above, however, is pulmonary hypertension regardless of the etiology. When systemic hypoxia is present its myocardial depressing effects add further to this physiological derangement. It would appear that cor pulmonale should be a descriptive term reserved for cases of right ventricular hypertrophy and failure, compensated or decompensated, due to changes in the pulmonary vascular bed. If the pulmonary vascular resistance is increased the cardiac output will decrease and if there is a decrease in the arterial oxygen saturation, there will be an increased demand on the cardiac output. Varying degrees of these factors are present in chronic lung disease and they probably work against each other. The net effects of these two forces is hard to evaluate experimentally at the present time. For those who wish to differ, one component is usually intimated in all unrelated definitions of cor pulmonale. There is a primary or secondary change in the pulmonary vascular bed.

Physical Findings

A paucity of physical findings may be present in cor pulmonale depending upon the degree of cardiac compensation, however they usually consist of malaise, apprehension, dyspnea, fatigability, anorexia and weight loss. Cyanosis and clubbing of the fingers may be present when the condition has been of long duration. The heart may be normal to percussion, nevertheless one should be suspicious of a shifting P.M.I. toward the xiphoid on inspection. Tachycardia may be present and systolic and diastolic murmurs along the left border of the sternum are common. The pulmonary second sound is usually accentuated. Overt signs of right sided decompensation may be present in advanced cases.

Any controversies related to the presence of cor pulmonale may be settled by cardiac catheterization but this is still impractical in the average hospital or physician's office. Simple, valuable procedures may be easily obtained however. They consist of circulation time studies, venous pressure with hepatojugular reflux and the hematocrit. A careful history and physical examination still re-

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 5, 1959.

main the most important factors in the diagnosis of this condition.

Roentgen Findings

Roentgenologically the heart may or may not appear enlarged. Quite commonly there is a prominence of the pulmonary artery segment along the left cardiac border, causing a convexity of this area instead of the concavity usually found. Bronchovascular markings may be exaggerated due to engorgement of the main pulmonary arteries and their chief subdivisions.

Enlargement of the right ventricle may be demonstrated in the right anterior oblique view in which the right ventricle forms the anterior border of the cardiac silhouette and encroaches on the retrosternal space. In many cases there may be coexisting enlargement of the left ventricle. This may be due to existing anoxemia or to independent cardiac diseases. One should be careful however in the interpretation of left ventricular enlargement because right ventricular hypertrophy may produce marked clockwise rotation of the heart. The left ventricle may then fluoroscopically appear falsely enlarged. In severe decompensated cor pulmonale widening of the entire transverse cardiac silhouette may be seen. This is often due to right atrial enlargement. In these cases the shadow of the superior vena cava may also be wide and prominent.

Electrocardiographic Findings

Electrocardiographic changes in cor pulmonale are usually manifestations of positional cardiac changes. This may be secondary to diaphragmatic descent with changes in the lung size and volumes or to primary cardiac enlargement. Distinct evidence of right ventricular hypertrophy is usually observed only in advanced cases.

Electrocardiograms may disclose no abnormalities, however occasionally the ECG may be of some aid. The most definite evidence of right ventricular hypertrophy is a reversal of the QRS pattern in the precardial leads. V-1 through V-4 exhibit tall R-waves with relatively small S-waves. The T-waves may be inverted in V-1 through V-4 and upright in V-5 through V-6. T-waves may be inverted in all precardial leads due to associated left ventricular disease. Precardial leads from the right side of the chest may further elucidate right ventricular hypertrophy. Standard limb leads may exhibit right axis deviation but this is a nonspecific sign dependent on the position of the heart. Tall sharply spiked P-waves (P-Pulmonale) are often seen in the standard leads II, III, AVF. They probably reflect right auricular hypertrophy or dilatation. These findings are only confirmatory evidence but since they occur frequently in cor pulmonale they must be regarded as an important concept in this disease.

Physiological Causes

Response of cor pulmonale to therapy is directly proportional to the reversibility of the underlying physiological causes. This stresses the need for early diagnosis before the underlying pulmonary changes become static, and is especially true in pulmonary emphysema. Commonly the first attack of cor pulmonale is preceded by an acute bronchitis or pneumonitis. Infection leads to mucosal edema with an increase in bronchial secretions and exudates. Alveolar hypoventilation and bronchospasm result. Under the above conditions the energies expended to maintain adequate pulmonary ventilation become tremendous.

This becomes clear when one keeps in mind that resistance to airflow in a channel varies inversely to the fourth power of the channel diameter. If the diameter of the bronchial tree is reduced to one half of its original size by the infection, the resistance will be increased by a numerical factor of 16.[16] Since work and resistance are directly proportional, the energy expended to maintain ventilation becomes enormous. The heart and thoracic musculature must therefore increase their work despite an existing oxygen deficit. Fever, superimposed on

the body's inflammatory response, increases the tissues' metabolic demand for oxygen and contributes further to the already existing hypoxia. In an attempt to reduce the elevated body temperature there is dilatation of the skin subpapillary venous plexuses. This places an additional demand on the cardiac output. A vicious cycle is then established which perpetuates itself.

A crucial point in the individual's survival may be whether the maximum energy that can be expended under the above circumstances can support adequate pulmonary ventilation. This demonstrates why treatment of bronchopulmonary infections is one of the most important available means for the prevention of cor pulmonale. It is important to recognize the presence of infection before the heart failure develops. Any acute or unexplained exacerbation of malaise, cyonosis, dyspnea, cough or wheezing in a patient with chronic lung disease should make one suspect the presence of pulmonary infection. It should be remembered that bronchial secretions may contain a large bacterial flora without being obviously purulent. This is because the fibrin structure of the dying mucus prevents leucocytic migration into it. For this reason a gram stain and culture of the sputum are important.

Therapy

One should not wait for the full blown picture of the infection to develop before starting treatment and it should be borne in mind that fever may be supressed if the patient is on corticoids. Therapy employing the combined use of antibiotics appears advantageous. It usually consists of penicillin and one of the broad spectrum preparations such as the tetracyclines. Unilateral bronchopulmonary infections in the presence of widespread lung disease can possibly lead to a generalized pulmonary hypertension. It has been shown that hypoxia causes pulmonary artery vasoconstriction. Experimentally if unilateral hypoxia is established there is an increase in the quantity of blood shunted to the eupoxia side. Pulmonary hypertension may then result.

Bronchodilators are of help in the treatment of bronchospasm, bronchial obstruction, and in the reduction of bronchial secretions. The bronchodilators may be classified roughly in two groups: the direct bronchodilators and the systemic bronchodilators. The oral preparations are somewhat disappointing; the reason for this most likely lies in the fact that the generalized systemic effect may be disadvantageous to the patient and thus limit the benefit that they produce. One usually cannot get the maximum desired effect without other systemic side effects ranging from tachycardia to dryness of the mouth. These compounds are therefore useful as basic medications given in smaller quantities than their full dosage. Aminophyllin is a very useful drug because it is a coronary vasodilator, cardiac stimulant, bronchodilator, and it induces or increases diuresis. It has been reported that the drug also acts synergistically with ephedrine. Its use as a suppository should be reserved for acute exacerbations because it tends to cause a granular proctitis.

One of the most effective ways to employ the dilating effect of the epinephrine like drugs is direct application to the bronchial mucosa by use of a hand nebulizer or by the use of intermittent positive pressure breathing. Even in the presence of systemic hypertension epinephrine-like drugs are relatively safe because systemic absorption is somewhat limited. Intermittent positive pressure breathing appears to afford more relief than the bronchodilators alone. This is probably related to its direct physical effect on the pulmonary physiology.

In the presence of bronchial inflammation any anti-inflammatory substance may act indirectly as a bronchodilator. Therefore there is a real use for corticoid therapy in inflammatory conditions of the bronchi; however, one must be careful "to cover" the patient with adequate antibiotics. Pulmonary tuberculosis must also be ruled out before one embarks on

prolonged corticosteroid therapy. Fortunately, the dosage required to produce improvement in these patients is a little more than the normal output from the adrenal glands. As a rule after the initial loading dose only a small fraction of this amount is required in the morning to reduce the sputum considerably and increase the expiratory vital capacity. Clinically it appears that there is no advantage in using ACTH Jel in place of oral corticoids.

Sputum liquefying agents such as ammonium chloride and the iodides are many times disappointing. Again the problem arises that a very large dose is necessary for any considerable bronchorrhea to be produced. With iodized drugs the effective dose for an individual may be that amount which will produce mild soreness of the mouth and also loss of taste and smell. Ammonium chloride in adequate doses may further upset the patient's acid balance state which is already deranged in the presence of chronic lung disease with superimposed infection and hypoxia. By far the most useful liquefying agent is water, both by mouth and inhalation, the latter in the form of steam.

The routine use of enzymes such as Trypsin or Desoxyrabonuclease appears to have varying degrees of side effects. Frequently, hypersensitivity to these enzymes may be observed. It is thought that Trypsin may produce an undesirable change in the bronchial mucosa. When the mucosa is suffering the assaults of a disease process great care must be taken not to create further injury.

The antihistamines may exert some effect in reducing inflammation and bronchospasm associated with chronic pulmonary infections. Many clinicians feel, however, that they cause a drying of mucous membranes with inspissation of mucus plugs.

Diamox has been recommended in the treatment of cor pulmonale because of the following pharmacological effects. It causes a copious renal excretion of sodium, potassium, bicarbonate, and water. This diuresis reduces pulmonary and venous congestion. It may also reduce the hypercapnea and its associated depression of the respiratory center. To be effective Diamox must be given in large doses for four to five days with free rest periods of two to three days. The drug frequently is disappointing and after an initial improvement of several weeks the symptoms usually return whether the drug is continued or not.

Recently it has been demonstrated that salicylates in large doses increase the sensitivity of the respiratory center to carbon dioxide. It seems however that very large doses out of the range of tolerance are required. The use of salicylates for this purpose is still in the experimental state.

Chronic hypoxia in emphysema leads to hypervolemia with increased circulating blood volume and polycythemia with an increase in the hematocrit and viscosity. The circulatory effects may be beneficial in the early stages since they compensate for the reduced oxygenation of the alveolarcapillary blood. "It is clear that the oxygen carrying capacity is almost the same in the case of blood only 70 to 75 per cent saturated with oxygen in a concentration of 20 grams of hemoglobin per 100 ml. as it would be in a normal concentration of 16 grams of hemoglobin per 100 ml. 96 per cent saturated.[4]" In the same manner it can be shown that an increased cardiac output compensates also for a decreased supply of oxygen. When polycythemia becomes marked however it may have a deleterious and overloading effect on the heart in increasing still more the cardiac work. Phlebotomy in such cases may be of considerable benefit by breaking this vicious cycle and reducing the hypervolemia, polycythemia and blood viscosity. Phlebotomy should be performed if the hematocrit is elevated to 50 or more. Occasionally re-evaluation and "tidying" up the patient's therapeutic regime may gradually reduce the polycythemia without necessitating phlebotomy, provided the patient is not in acute distress. An

attempt should be made to maintain the hematocrit between 45 and 50. Isotopes may be used to reduce the polycythemia. Caution should be in order in the use of phlebotomy and diuretics. If there is a very high hematocrit it is important to do a phlebotomy before administering the diuretics in order to prevent excessive blood hemoconcentration and increase viscosity.

In advanced pulmonary disease the respiratory center in the medulla becomes proportionately insensitive to the rising CO_2 blood concentrations. A physiological level is then reached at which the patient depends on chemoreceptors located in the carotid and aortic bodies. These trigger areas are sensitive to circulatory arterial hypoxia which under the existing circumstances becomes the dominant respiratory stimulus. If these patients are given oxygen in high concentrations there may be a decrease in the existing arterial hypoxia and this vital respiratory stimulus disappears. The existing hypoventilation becomes aggravated. There is an increase in the manifest hypercapnea and respiratory acidosis is augmented. Narcosis, coma and death may then ensue. Oxygen therapy may be hazardous and should be given under close supervision when first administered. This may be done by giving low concentrations of 20 to 40 per cent oxygen, or more concentrated oxygen may be given intermittently depending upon the patient's clinical response.

Cardiotonic drugs in acute and decompensated cor pulmonale may be of secondary importance, since the usual underlying causative or responsible factors are alveolar hypoventilation and pulmonary hypertension. Digitalis therapy should be instituted slowly and cautiously. The results are frequently not so clinically gratifying as are seen in left ventricular failure and may be masked by the beneficial results of antibiotics and bronchodilators. Diuretics and salt restriction are also of importance in these cases.

Sedatives in a hypoxic disorientated patient tax the physician's pharmacologic knowledge. It is easy to see why a drug which exerts respiratory center depression and smooth muscle spasm is detrimental. The worst offenders in this group are the opiates and barbiturates in large doses. Chloral hydrate is usually therapeutically effective and is the drug of choice by many physicians. Tranquilizers are of use at times but may further add to the patient's sensorial cloudiness.

Summary

Alveolar hypoventilation and pulmonary hypertension are major pathological components leading to polycythemia, hypervolemia, myocardial hypoxia and altered right ventricular dynamics, compensated or decompensated. The physiological result is collectively designated as cor pulmonale. Therapy is aimed primarily at the pulmonary vasculoparenchymal dysfunction and secondarily at the failing right ventricle.

Antibiotics of choice usually consist of one of the broad spectrum derivatives combined with penicillin. Sputum cultures and sensitivities enhance drug specificity.

Oxygen, corticoids, and bronchodilators form an equally important background in this therapeutic regime.

Sputum liquefiers and Diamox are of limited value.

Overt heart failure is treated by slow digitalization, sodium restriction and diuretics.

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Historical Notes

Man (**genus homo**), has by common consent been placed by the naturalists at the head of the animal kingdom, and although he has the means of protecting himself to a great extent, by clothing, fire, and houses, from extremes of heat and cold, he cannot abstract himself wholly from those climatic influences which modify the species of other genera. * * *

It is curious to see the perfect parallel which the genus **Canis** (Dog) runs with that of Man. The dawn of history finds the uttermost parts of the earth covered with different races of men, and everywhere these human types have been associated with one or more races of dogs equally distinct from each other.

It is now demonstrated from the monuments of Nineveh and Egypt that the races of the genus **homo**, and those of the familly of the Canidoe (Dogs) were as distinct in type 3500 years ago as they now are, and that no causes in operation from that date to the present have been able to change one form into another.

J. C. Nott: Instincts of Races,
New Orleans M. & S. J. 19:1 (July) 1866.

A Simple Practical Method For Increasing Accuracy of Protein Bound Iodine Determination

• Solution for common hazard is described for a valuable diagnostic test.

F. MICHAEL SMITH, JR., M. D.
JOHN N. FRAZER, M. T.
Thibodaux

THE diagnostic value of the protein bound iodine level has become a most important fixture in the practice of modern medicine. Current procedures are based on the distillation of iodine from an acid digestion of proteins. In this manner very minute amounts of iodine, about one ten-millionth of a gram per each milliliter of sera, are measured. Contamination by mercury or extraneous iodine is a very serious hazard.

When we first set up the P.B.I. test at this Clinic, we experienced several months of repeated disappointments and frustrations. We attempted to make our own reagents and underwent repeated failures until Mr. Frazer, our head technologist, started using demineralized water. Because of our experience, we urged Mr. Frazer to prepare the following report; which we feel will be a guide to others who are setting up the P.B.I. test or who are having trouble with the test in any manner.

The determination of the protein bound iodine blood level requires absolutely accurate and reliable reagents. The purchase of a complete reagent set and a distillation apparatus can still present a very serious problem. In our case, the reagent blank changed daily and, at times, threatened to ruin plans for future determinations.

A hint to our solution was found when we gave up distilling our own water and began purchasing distilled water. Here again, to a modified degree, the old problem of the fluctuating blank began to appear in the laboratory. Several commercial sources for the water gave widely differing results. The solution began to emerge when several carboys of water from the same plant were found to differ —simply because some of these were not sealed!

The use of an ion-exchange resin apparatus resulted in chemically pure water, which worked well the day it was made in the laboratory. Each day that passed gave increasing higher values for the reagent blank.

The evident necessity for fresh demineralized water was proved by daily (A) passing distilled water through an ion-exchange demineralizer or (B) passing ordinary raw tap water through the same apparatus two times to give highest purity.

After 100 determinations of protein bound determinations, we have gotten absolutely consistent results of the highest accuracy. In our laboratory, it is part of our procedure that we fill one or two carboys from demineralized raw tap water passed through a fresh ion-exchange bed. Each day protein bound iodine determinations are made, the water from the carboy of demineralized water is passed once again through a fresh ion-exchanger bed as it is used for the test.

The precautions have so simplified and standardized the test, that any laboratory

From The Children's Clinic, Thibodaux, La.

technologist can determine the test with ease and confidence.

Discussion

The U. S. Pharmacopeia states, "demineralized water will be interchangeable for distilled water for pharmaceutical purposes, except those involving the preparation of injecting preparations." This is explained on the basis the ion-exchange bed will not remove bacteria or pyrogens. However, the demineralized water properly prepared will be comparable to triple distillation, which is suitable for critical analytical determinations.

One demineralizer is made by Crystal Research Laboratories, Inc., 29 Allyn St., Hartford 3, Conn. (Deeminizer). Another ion-exchange apparatus is manufactured by the Illinois Water Treatment Company, 840 Cedar St., Rockford, Ill. (Illcoway ionXchange.) These units are not expensive and give economical water.

Natelson [1] recommends distilled water be passed through an ion-exchange apparatus before using as diluent in test and making of standards in flame photometry for sodium and potassium determinations.

A standard chemistry text [2] states, "it is very difficult to keep chemically pure water for any length of time because of the solubility of gases in the atmosphere, especially carbon dioxide." There is also evidence of a solvent action of distilled water on glass containers.

Caraway [3] found distilled water often contaminated with chlorine (also a halogen, as iodine). He advocated routine testing of purity of such water.

Summary

A method for routine preparation and treatment of distilled water and/or raw tap water is described here. This makes possible carefully controlled conditions for protein bound iodine determinations.

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Historical Notes

Why is it that the dog fanciers lay so much stress on **pure blood**? Does not an impure cross destroy the value of a stock and its reliability for breeding purposes? * * * So adhesive is the strain that a mare of Lord Derby that had a colt by a Zebra, when bred afterwards for several successive years to thorough bred horses, had every colt more or less striped like a Zebra, which had been the father of the first colt only. The Greyhound has little sense of smell and pursues his game by sight and speed. The Hound, on the contrary, depends on smell and endurance. The Bulldog is useless for hunting purposes. * * * These qualities are retained so long as the race is kept pure, and when two are crossed, an intermediate type is produced partaking of the physique and moral of both parents.

J. C. Nott: Instincts of Races, New Orleans M. & S. J. 19:5 (July) 1866.

Treatment of Major Compound Injuries of the Hand

• The complexities of the subject are described and the management to bring optimal results.

DUNCAN M. McKEE, M. D.
New Orleans

THE increase in frequency of compound injuries of the hand has been concomitant with agricultural mechanization and increasing industrialization. These injuries present complex problems of reconstruction of both the surface tissues and the deeper structures. For this discussion a compound injury of the hand is defined as one with significant loss of surface tissue as well as injury to the essential deep structures. Treatment should be initiated only after careful evaluation of the extent of the injury and formulation of a plan of reconstruction including both the primary and later operative stages. Evaluation of injuries of this type requires a combination of preoperative and operative study. The extent of loss of surface tissue and of sensation usually can be determined in the emergency room. Fractures are demonstrated by roentgenography before operation. Motor function in the severely injured hand is frequently difficult to evaluate and final evalation must await examination with use of a general anesthetic. All structures involved in an injury should be carefully examined and evaluated with use of an anesthetic and in a sterile field despite any preoperative impression gained of these structures.[1-3]

Selection of a plan of treatment is of basic importance and involves consideration of many factors. Function and cosmesis must both be considered, although, in general, optimal function produces an optimal cosmetic effect. The needs of the patient must be balanced against his loss in terms of time, money, and discomfort. The tendency, in the past, has been to be overly concerned with the economic loss and insufficiently aware of the advantages of reconstruction. A multi-staged reconstructive program that will materially improve the function of the hand, although irksome to the patient at the time, is usually a sourse of gratification to both patient and surgeon when it is completed.[3] The urge to "finish the job in one operation" is too often present. The value of reconstruction must be emphasized to both the medical profession and the lay public.

A few factors militate against reconstruction beyond a simple short term program. Advanced age, subnormal intelligence, and emotional imbalance precluding cooperation by the patient discourage the surgeon from a complicated reconstructive plan. Loss of minimal function of the hand, e.g., evulsion of the fifth digit, usually does not warrant a long-term program. However, in most injuries of this type, particularly those endangering the basic functions of pinch and grasp, complete reconstruction is well worth-while. Although the component parts of the injury must be treated as a whole, they will be dealt with separately for purposes of discussion.

Immediate Treatment

Surface Tissue—Immediate or early closure of the wound is essential to successful reconstruction of the hand.[4, 5] Healing of wounds of the hand by secondary intention occurs less often now than formerly. A granulating wound with its attendant chronic infection, edema, and deposition of protein in the

From the Department of Plastic Surgery, Ochsner Clinic, New Orleans.

mobile structures of the hand will often lead to stiffening and loss of function of the hand.

It is unusual to encounter a wound of this type within twenty-four hours of injury that cannot be closed immediately. I have routinely applied grafts and flaps to crushed, evulsed or gunshot wounds of the upper extremities with prompt healing without infection. I do not routinely use antibiotic therapy in these cases but this may occasionally be helpful. The principle of delay in closure of a wound that is sometimes expressed seems to be an outgrowth of military surgery. Combat surgery and that done in the modern urban hospitals of this country are not comparable. The differences between the two in the degree of contamination of the wound, delay in transportation, operating conditions and facilities for postoperative care are significant.

Immediate closure of these wounds with primary suture, grafts or flaps is predicated on the proper preparation of the wound.[5] Meticulous debridement requires the utmost patience and considerable experience in recognizing damaged tissue. Unnecessary removal of important structures is particularly damaging in the hand with its intricate mobile mechanisms. However, failure to remove dying tissue or foreign bodies will result in suppuration with its sequelae of fibrosis and stiffening of the hand. Several hours may often be spent in such debridement with gratifying results. The wound should be irrigated with large amounts of physiologic saline solution under moderate pressure before, during and after debridement.

Skin, such as a partially evulsed flap of doubtful viability, should be excised and replaced with a graft or flap as indicated.[5] It is better to excise viable skin than to leave tissue that will ultimately necrose.

The choice of method of closure of the wound is dictated by the type of wound. Closure of the wound with local tissue is, of course, the ideal and should be done when possible. However, if this is impractical, tissue must be obtained from elsewhere. A free graft of full or partial thickness skin is used, if possible, and is indicated if tendons, bones, joints and nerves are not exposed. The necessity for future reconstruction of the deep structures will preclude the use of a free graft.

Exposed tendons, bones, nerves, and joints that cannot be covered by local tissue require pedicle flap coverage. This should be done as the primary procedure in the treatment of these injuries. Exposed tendons, joints and cortical bone are usually insufficiently vascular to accept a free graft. In many instances these structures have themselves been deprived of adequate blood supply, and if nourishment is not furnished, they will undergo necrosis. It has been my experience that these structures, whose blood supply has been reduced to the point of necrosis, may often be preserved both anatomically and functionally by coverage with a vascular pedicle flap. In one of my patients whose hand had been deprived of its soft tissue covering and of vascular supply to the distal two-thirds, preservation of the tendon, bone, joint and nerve complex was possible both anatomically and functionally. It has been apparent that immediate application of pedicle flaps, when indicated, has greatly reduced the period of morbidity, immobility and stiffening of the hand which is so often a sequel of these injuries.

In general, there are only two contraindications to immediate application of a flap: (1) other major injuries with poor general condition of the patient, and (2) such severe contamination of the wound that it cannot be eradicated at the initial procedure.

The source of flap tissue is dictated by the individual injury. If possible, resurfacing should be accomplished by local rotation or transposition flaps. The area that can be covered by a local flap is limited, even on the dorsum of the hand, and underestimation of the size of the pedicle flap required is common among those unaccustomed to dealing

with these problems. Local flaps can usually be moved with impunity in one stage, if they are properly designed, and this constitutes the ideal method of coverage when a pedicle flap is required.

The opposite forearm and arm, abdomen, and chest are potential sources for distant flaps. Cross forearm flaps are of limited size and the necessary position of the extremities is so disabling to the patient that they are usually not used. A pedicle flap of moderate size can be elevated from the opposite arm and this gives the patient greater use of the upper extremity during the period of attachment of the flap. Cross arm flaps are of value in resurfacing the dorsum of the hand and fingers but are difficult to position for coverage of the palmar surface.

Abdominal skin is most widely used and furnishes an almost unlimited source of pedicle flap skin.[3, 5] Except in the obese or aged an abdominal flap may be formed in one stage to cover all or a portion of the dorsum of the hand and digits. Pocket or bi-pedicle abdominal flaps should not be used if it is possible to avoid them. The exposed raw tissue on the flap and in the bed of the flap tend to increase the inflammation, edema, and eventual stiffening of the hand itself. Abdominal skin with its thick panniculus is not an ideal replacement for the skin of the hand but may be the best available.

Pedicle flaps from the anterior wall of the chest create prominent scars and should not be used in women. However, if an abdominal flap is inadvisable, the skin of the chest affords equally good coverage with less subcutaneous fat.

Nerve Repair—The superiority of primary nerve repair over secondary repair has been demonstrated to my satisfaction.[2] All nerves should be repaired primarily if additional dissection is not necessary. Neurorrhaphy requiring advancement and transplantation of a nerve should be performed at a later date. In my experience fine silk has proved to be a satisfactory suture material for repair of nerves. The ends of nerves that cannot be apposed because of loss of substance should be marked with a stainless steel suture to facilitate their localization at a secondary procedure.

Repair of Bone—Fractures should be aligned and fixated with buried Kirschner wires which are later removed. If sufficient bone has been destroyed to prevent apposition of the ends at the initial procedure, the remaining segments of bone may be fixed in their functional position with Kirschner wires, usually placed transversely across the bone and into the adjacent bony structures. An example of this is the through-and-through gunshot wound of the palm of the hand with destruction of the central portion of one or more of the metacarpals. These metacarpal stumps may be fixed by passing Kirschner wires transversely across the hand through the bony stumps and into the intact metacarpals on each side of the fractures. The presence of a fracture does not militate against use of pedicle flaps. I have not observed that fractures fixed by this method are displaced during the period of attachment of the flap. Primary bone grafts are not often used in these injuries but may be successful if the wound is clean and of very short duration.

Tendons—Extensor tendons should be repaired primarily unless the point of repair is in contact with a bony fracture or an open joint. Sutured extensor tendons may be covered with a pedicle flap with the expectation of obtaining a mobile tendon. Flexor tendons in the proximal palm are usually repaired primarily. Those in the distal palm and digits should be repaired as a secondary procedure. Such procedures as tendon transfers and tendon grafts should not be done in the initial repair of this type of injury. However, the future use of tendon grafts or transfers must be considered in the design and application of the pedicle flap.

Secondary Repair

With compound injuries of the hand secondary reconstruction is often required for optimal function. After initial re-

pair a variable period is devoted to regaining mobility with exercise, physical therapy and use of dynamic splints when indicated. It is usually best to delay secondary procedure for six or more months or until full mobility of the hand and maturation of scar tissue have occurred.[3] Earlier operative procedures are indicated for nerve repair and to relieve malposition of the hand or digits.

Secondary nerve repair in this type of injury may require advancement or transplantation to replace a missing segment of nerve. Usually, approximately 4 to 8 cm. of length can be gained at the wrist by transplantation of the ulnar nerve at the elbow and dissection and advancement in the forearm. In such repair of mixed motor and sensory nerves, return of sensation has been good but return of motor function to the intrinsic muscles of the hand has occurred in a minority of cases. If the missing segments of nerve cannot be replaced by advancement and transplantation, a nerve graft may be used. Return of sensory and motor function has occurred in only a minority of these cases. Repair of the pure sensory nerves of the hand is, of course, attended with a high incidence of success.

Tendon transplantation is often necessary to compensate for loss of motor function in these nerve injuries. If, by virtue of the type of injury, the prospects of return of motor function are poor, tendon transfer may be combined with secondary nerve repair, usually eight to twelve weeks after resurfacing is completed. In general, I have used multiple sublimis transfers for median and ulnar nerve palsies and transfer of the wrist flexors for radial palsy. If intrinsic motor function does eventually recur, these tendon transfers are not a detriment to the hand. Indeed, they serve well as a built-in dynamic splint during the period of neural regeneration. Even with the eventual return of intrinsic motor function, we have found that these tendon transfers shorten the period of disability for the patients and return them to a gainful occupation at an earlier date.

Replacement of destroyed tendons is more difficult than in the hand that has not suffered extensive loss of skin. Tendon repair, transfer, or graft must be beneath a vascular surface tissue and, consequently, free skin grafts in these areas must be replaced with pedicle flap tissue for tendon reconstruction. Even a pedicle flap surface creates difficulties in regaining mobility of repaired tendons. The tendon repair, transfer, or graft is placed through the fatty layer of the flap, if possible, but the problem of scar fixation of the tendon, particularly at the borders of the flap, is still present.

Apposition of tendon ends is preferable to substitution, and tendon transfer, if practical, is preferable to use of a tendon graft. In general, the minimal number of sutured tendons, transfers or tendon grafts is desirable. Tendons that serve a common or similar function may be grouped together and repaired with a single transfer or graft; e.g., repair in the proximal hand of the extensor tendons of the four fingers by a single graft or transfer.

My experience with use of free tendon grafts has apparently been comparable with that of others. Such grafts, if placed through soft vascular tissue, often gain useful mobility. When in contact with dense scar tissue, bare bone or other unyielding tissue, these grafts rarely develop an optimal range of motion.

Bony continuity is restored with bone grafts usually from the iliac crest. Grafts from this area are easily removed and afford a good source of cancellous bone. The graft is shaped to the desired contour and consists largely of cancellous bone with only enough cortical bone to give adequate strength. Fixation is with Kirschner wires. Again, a vascular surface tissue is essential for survival of the graft, and free skin grafts and scar tissue must be replaced with a vascular pedicle flap. Repair of the metacarpals and phalanges by bone graft is usually attended by good function.

During procedures for repair of the deep structures revision of surface tissues may be accomplished. Defatting of flaps and revision of scars often require multiple procedures, and time may be conserved by combining this with repair of other structures.

Summary

A plan of reconstruction must be formulated before initial treatment of compound injuries of the hand. Early or immediate resurfacing is the *sine qua non* of successful reconstruction of these injuries. Initial resurfacing with pedicle flaps is indicated by exposure of tendons, joint, bone and on occasion, nerves, and if future reconstruction is contemplated. Treatment should be initiated only after careful evaluation of the extent of the injury.

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Historical Notes

Do not the same general laws which govern the rest of the animal kingdom apply with equal force to Man? Has not the Almighty placed his stamp, intellectual and physical, upon the races of men as strongly as he has upon the species or varieties of other genera? We have already stated what the works of Champollion, Rosellini, Lepsius, and other hieroglyphic scholars so fully prove, that the same races of men have been living around the Mediterranean for 3500 years. Since the literature of China and India have been laid open to us, we have the evidence that Mongol, Malay and Hindoo types are quite as old. * * * The permanence of these human types, I repeat, is no longer a point of dispute; so long as the physical causes which have for ages been acting on them remain unchanged, they remain indellible.

J. C. Nott: Instincts of Races, New Orleans M. & S. J. 19:5 (July) 1866.

Medicine and Marketing*

• A timely and interesting discussion on a subject that has received much unfavorable publicity.

JOHN W. ECKMAN †
New York, N. Y.

I WOULD like to examine, with you, the relationship between good pharmaceutical practice and good business practice—between medicine and marketing.

Why, you may ask, is there any problem in defining the area in which the pharmaceutical manufacturer operates. What are the peculiarities which distinguish this business from any other? There seem to be two widely held views on this subject. On the one hand, we are looked upon by many observers as simply another manufacturing industry, probably not too different in basic structure from, say, the nuts-and-bolts business. Others, however, seem to feel that we should be devoted, dedicated scientists whose sole concern is the battle against the age-old enemy—disease. These are, admittedly, two extreme views, but they serve to illustrate the peculiar problem which we face in conducting our business.

I'm sure that if I were to ask this audience the meaning of the initials AMA, your reply would correctly identify the American Medical Association. However, the same question asked of a group of my business associates would draw an equal number of mentions of the American Marketing Association and the American Management Association.

An advertising agency in New York has a slogan which they identify by the initials USP. No, they do not refer to the United States Pharmacopeia. Their initials stand for *U*nique *S*elling *P*roposition, an attribute which they claim to build into every advertising campaign they prepare for their clients.

How, then, do we equate these two apparently divergent views? In the words of the Old Gold ads, are we tobacco men or medicine men? Or, as Time magazine put it in a cover story on the late George Merck, is medicine for people or for profits?

I am not here as an apologist for the pharmaceutical industry, nor do I intend to point piously to the discovery of so-called "miracle drugs" in justification of practices for which we have been criticized. I would simply like to present some of the facts of life about our business in the hope that it will give you a better understanding of us. It is important to us that you know these things because you, through your publications and your daily contacts in the medical profession and with the public, are in a position to educate and influence many others who may have erroneous ideas about us.

It is easy to understand why there should be misconceptions about us. We had our roots in the alchemy of antiquity and, until recently, an air of romance and magic has surrounded the practice of pharmacy. Just a few years ago the prescription was written by the doctor in a mysterious ancient language. It was compounded by the pharmacist in a remote, private part of his establishment in an atmosphere suggestive of witchcraft and sorcery. More often than most of us are willing to admit, all this hocus-pocus accomplished was the successful concealment from the patient of the dubious therapeutic properties of his medication.

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* Presented at the 1959 State Medical Journal Conference at the Sheraton-Towers Hotel, Chicago, Illinois, on October 26, 1959.

† Vice President of Thos. Leeming & Co., Inc., and President-Elect of the Pharmaceutical Advertising Club, Inc.

Today, just a few years later, the veil of mystery has been lifted. Drugs have been developed with known, specific pharmacologic properties and are usually prescribed by brand name. The pharmacist, no longer required to compound mysterious potions, is assuming a new role as therapeutic consultant to the physician; as the man to whom the physician turns for information about the latest drugs, their actions and side reactions, their indications and dosage. The public, which is, after all, the greatest beneficiary of these advances, is living longer and is apparently spending this extra time devouring newspaper and magazine articles on health subjects or debating the relative merits of the newer corticosteroids.

The government, too, is finding it interesting and, perhaps, politically expedient to take a searching look at us. Few people realize that we are already one of the most strictly regulated industries in America. We must comply not only with the requirements of federal drug legislation and rulings, but every state and many municipalities have their own drug laws. I mentioned earlier that we differed markedly from the nuts-and-bolts business, and government regulation is certainly an important area of difference. Some months ago I showed one of our clinical investigators in private practice a New Drug Application for a drug which he had been testing. He was amazed at the qualitative and quantitative information which we must supply to the Food and Drug Administration on chemistry, pharmacology, safety, efficacy, manufacturing methods, assay methods, and control procedures before we may market a new drug. Today, government interest in drugs is at a new high. Here are the subjects covered by only a few of the bills directly affecting us which were before the Congress at its adjournment on September 14th: amphetamine and barbiturate regulation; a change in the narcotics control law; color additive control; study of drug prices; the labelling of hazardous substances.

Believe me, the age of mystery in our business is over. Don't misunderstand me; we have no objections to being called to account for our stewardship. After all, our business is directly concerned with the public health and we succeed in our endeavors only insofar as we discharge our obligations in a mature and responsible way. However, we deplore the reckless, irresponsible, and unfounded attacks that have been made against us, purportedly in the public interest, but actually stemming from a desire to build circulation and readership or to make political hay. Such recent headlines as "drug profits excessive," "shotgun dosing common" or "little profit for drug companies in cancer research" contribute nothing to any constructive cause. They do, on the other hand, provide powerful ammunition for those who would have all medical care placed under a socialized system.

We welcome intelligent interest in our activities, but the interrogations, investigations and indictments levelled at us today make us feel that there has been something immoral in our having helped the medical profession to bring about a 63 per cent decline in deaths from syphilis, 77 per cent in maternal deaths, and 91 per cent decline in influenza deaths which occurred in the short space of ten years from 1944 to 1954.

Now that the curtain has been lifted, what are people saying about us? During Mr. Khrushchev's recent visit it was suggested that a Truth Squad follow him in his travels and rebut some of his more glaring inaccuracies with factual data. Perhaps today I can perform somewhat the same function for the pharmaceutical industry.

One of the most common criticisms we hear, and I'm sure you have also heard it, is that drug prices are too high. I'm not at all sure I know what "too high" really means because I have the same problem we all share in trying to assess the value of a dollar in terms of current price levels. But let's at least attempt to put the subject of drug prices

into some perspective by examining the relevant facts.

This subject would be far easier to deal with if we were discussing automobiles. A $4,000 price tag on a new car would be explained by the manufacturer on the basis of the relationship between the length, weight, horsepower and appointments of his car in comparison to his competitors. No such easy answer is available to us, because our prices bear no relationship to the size of the capsule or the flavor of the elixir. Neither do we price our drugs on the basis of the urgency of the need for their use. A drug which saves lives may, and frequently does, cost the same as another drug which may be used only for symptomatic relief. Consider, for example, the cost of penicillin which dropped so precipitously as usage increased and manufacturing methods were improved.

Since we can't discuss our prices from the standpoint of product features, what else can we use as a yardstick? Let's look first at the absolute figure, the dollar cost of a prescription. In 1929, the surveys tell us, the average cost of a prescription was 85¢. By the post-war year of 1946, this had risen to about $1.50 and, in 1958, the average prescription price was almost exactly $3. You may feel that $3 is a high figure or a low figure, but almost certainly you will want to know what happened to all the prescriptions costing $10 or more that you have personally paid for. According to a national survey conducted in April of 1958, exactly 1.5 per cent of all prescriptions were priced at $10 or more. Let's not forget that, although numerically infinitesimal, these are the prescriptions which are magnified far out of proportion to their importance in the over-all picture.

These absolute prices do not really tell us very much without some frame of reference. I have said that the 1929 prescription cost 85¢. In terms of real income, it "cost" one hour and thirty-one minutes of work at prevailing wages. The 1958 prescription, in the same terms, "cost" one hour and twenty-six minutes of working time, actually less than in 1929.

Another way of looking at over-all drug costs is in terms of what consumers spend for other goods and services. I could preach a sermon on the relationship between the $18.74 per capita drug and pharmaceutical cost in 1958 and the $36.64 spent for tobacco products and $52.93 for alcoholic beverages, but this would add little to the logic of our discussion. Perhaps it would be more meaningful to compare drug costs with the cost of the other elements of medical care. For example, since 1939 hospital rates have risen 310 per cent; dentists' fees 90 per cent; physicians' fees 88 per cent; yet the cost of all prescriptions and drugs went up 46 per cent. If drug prices had risen as much as all other prices since 1939, it would cost the consumer at lease an additional billion dollars to buy the drug preparations now consumed. Surely these data are not even remotely suggestive of excessive drug prices, and they do not even take into account the tremendous increase in the effectiveness of the drugs dispensed today.

I don't know of any motivational research studies on the subject, but it seems to me that most patient complaints about prescription prices must arise from the relatively few $10 or $12 prescriptions. The physician can be extremely helpful here in giving a word of explanation to the patient when he orders these expensive drugs. Too, even when the prescription is not in the $10 range, we must realize that it is a purchase more or less forced on the patient by circumstances of illness beyond his control and, like a parking fine, it is a natural source of complaint.

If prescription prices are not too high, how do we account for what are frequently termed our "fabulous profits?" Here, again, I think a few facts are in order. Last year our industry averaged about 13 per cent of sales in net profit after taxes, a figure entirely comparable to other large dynamic manufacturing

operations. For example, U. S. Steel made 11 per cent net profit on its 1958 sales, and just recently I have seen Gillettes' and Eastman Kodak's interim 1959 reports showing a 14 per cent on sales. It seems to me that a great many people not well versed in financial matters confuse rapid growth with excessive profit. We have seen a tremendous expansion in our business in recent years as new, more effective drugs have been developed and come into widespread use. As sales have increased, our profits have increased and our stocks have risen in value. The company with annual sales of 10 million dollars ten years ago may be doing 100 million today. Its profits will have grown tenfold, its stock will have risen accordingly and probably have been split a few times and, without doubt, it will have been accused of profiteering by the misinformed who confuse growth with profit.

I happen to believe in our system of free competitive enterprise, and I think it is healthy, not immoral, for any legitimate business to make a profit. In the pharmaceutical industry, I do not feel it would be stretching a point to say that future progress in drug therapy depends upon making profits. We spend almost $200 million dollars a year in an intensely competitive research effort, a vast program which would have to be curtailed or abandoned if we were not financially able to continue and expand it.

Let's examine another major area in which our industry is different from most others. As you know, we are sometimes referred to as the "ethical" drug business, a term which is frequently misunderstood as implying that some other segments of the industry are unethical, possibly immoral, and probably due for a Federal Trade Commission investigation. It is an unusual term, unique to our business, and I daresay that few of you have heard of an ethical plumbing business or an ethical tobacco manufacturer. The term is widely misinterpreted as applying to prescription legend drugs when, in actuality, it merely refers to our practice of restricting the advertising of our products to the medical profession.

Here, again, is an area in which we have been criticized. Time does not permit me to go into a detailed analysis of each phase of our promotional activities, or to counter with the facts each complaint that has been voiced. In general, it may be said that our critics have accused us of going overboard in lavish promotion and have concluded that, in some way, this has been responsible for the so-called "too high" drug prices I mentioned a few minutes ago.

Strictly from the standpoint of dollars and cents, an editorial in the Journal of the American Medical Association a few years ago pointed out that if all advertising of a popular broad spectrum antibiotic had been cancelled, the price to the consumer could have been lowered from 50 cents per capsule to 48 cents, hardly a major saving if the value of our promotion to the physician as a form of postgraduate medical education is given proper consideration. The pace of therapeutic progress today is too rapid for the physician to render the best possible medical service to his patient without keeping up with current drug developments.

I said at the outset that I would not be a pious defender of our practices and I do not mean to imply that the material we prepare for physicians is an altruistic service. Ours is a highly competitive business and we do our best, within the limits of scientific accuracy and good taste, to promote our products in such a way as to win the physicians' acceptance. But, just as our operating at a profit insures the continuing availability of funds for research, so the promotion of our products provides the medical profession with an invaluable source of up-to-date therapeutic knowledge.

I have said that ours is an intensely competitive industry, and I would like to point out that competition exerts a most restrictive influence on our activities. Although it may sometimes seem to the physician that every drug company markets a tranquilizer, and that

the number of antihistaminic agents exceeds the U. S. population, the fact is that the product which performs clinically is prescribed and the product which does not live up to its promise is discarded. This is an inexorable law which, in the long run, means that a manufacturer will go into bankruptcy if he habitually introduces new products which do not stand the test of successful clinical usage. We do not, of course, always guess correctly but, believe me, we think long and hard about the advantages of our new product over existing therapy before we make the decision to spend large sums of money on its introduction. We examine our pharmacological and clinical data searchingly. We hope trustingly that our competitors have not beaten us to the gun. And we look apprehensively at a recent report entitled "More Drugs Die Younger as More People Live Longer" which tells us that the rate of obsolescence of prescription products in 1958 was the highest in the ten years during which this grim aspect of pharmaceutical marketing has been measured.

Here, again, the pharmaceutical manufacturer plays a dual role. To the extent that his new product makes a distinct contribution to therapy, its sales success is assured. If his product does not perform, he loses money. Put another way, his own self-interest is best served by the introduction of products which best serve the health needs of the nation.

I raised the question earlier of whether medicine is for people or for profits. There is no doubt in my mind nor, I hope, in yours that the greatest therapeutic advances of the past, and the greatest hope for the future, lies in a pharmaceutical industry dedicated to the proposition that medicine is for both people *and* profits.



Historical Notes

Self-love and self preservation are the ruling instincts of every animal and drive even the most untutored races to desire immortality; and, with the hope of attaining it, they seek to propitiate good spirits and evil spirits. It is not the love of the Lord, nor of virtue, that keeps most men in the "narrow path" but the fear of the devil and annihilation. If a little brimstone were not burnt under people's noses once a week at least, the devil would be most likely to drag the mass into the "broad road that leadeth to destruction."

J. C. Nott: Instincts of Races, New Orleans M. & S. J. 19:7 (July) 1866.

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Editorial

Drugs, Doctors, and Politicians

"Economics is a dismal science." This, in effect, was said by Carlyle over a century ago, and it is even more true now. We see before us the spectacle of politicians advocating free hospitalization for retired Social Security beneficiaries at the taxpayers' expense, criticism of the rising cost of medical care, for which these same politicians are in part responsible, and complaints against the costs of drugs, which are the most effective in all medical history.

The public interest in the price of drugs has recently been attracted by the sensational charges before the Senate Subcommittee on Anti-Trust and Monopoly. There it was stated that the profits were excessive and prices were completely out of line on certain items that various pharmaceutical houses produced. The executives of some of the major pharmaceutical houses were subjected to a sort of inquisition as to why the prices were what they are and what salaries were made by these leaders of one of the world's most important industries.

The manner of presentation, the superficiality of the charges, and sequence in timing in relation to the agitation for the Forand Bill, and the fact that it is an election year, all suggest that there is a plan behind the whole picture. The idea might be to present a tax supported plan as a campaign issue and transfer the battle against State Medicine in Congress to the area of partisan politics.

Since the charges of excessive cost of drugs have been made, it behooves us as physicians to interpret the economics of this situation to our patients and to the public. Inflation is responsible for about 20 per cent of the increase in the cost of drugs, while all items of consumer spending averaged together have increased 23 per cent since 1947. Although drugs have become more expensive in some instances, the need for drugs has been slightly reduced. In other words, each dose accomplishes more. In the distribution of the medical care dollar, medicines and appliances took 25 cents in 1949, and only 26 cents in 1958. The increase in cost has not been a source of profit to the local druggist. Authoritative investigations

have shown that after taxes and all other overhead expenses, the net profit out of every dollar the drugstore receives for prescription medication is less than 3 cents.

In the Congressional investigation referred to above, the major accusations were against the large pharmaceutical houses. Various charges were made that the big houses sold to the government cheaper than to the druggist; that the drug cost less in foreign countries than it might cost here; that one firm made a profit of 7,079 per cent on a new drug combination; that the promotion, sales, and distribution costs were too high and, in substance, that the pharmaceuticals were for profits and not for patients.

In order to answer these several types of criticisms, a general statement of the position of the pharmaceutical industry would be helpful. Elsewhere in this issue is a general review by a prominent worker in that industry.

Next, it must be stated that in order for medicine to have drugs with which to work, manufacturers have to conduct their affairs in such a way as to be able to stay in business. This means they must show a profit, and in order to show that profit they must have conducted research in order to find drugs which may be helpful. Having done so, they must go through an involved procedure of proving, testing, and sales promotion before distribution to the patient can provide any benefit to him. Involved in this process are two enterprises, both expensive and necessary.

One is research to discover and prove the value of a drug and the other is the presentation of the drug to the physician in order that the public may eventually benefit from it. The physician must learn of the drugs through the medical communications of the pharmaceutical industry before he can direct them to the patient. The facts about the drug are promoted through trade advertisements, but principally, by personal presentation. Approximately 90 per cent of the one million six hundred thousand prescriptions which are filled each day could not have been prescribed ten years ago, because they did not exist. Therefore, what the physician knows of 90 per cent of drugs in current use must have been learned in the last ten years in such ways as the industry made available to him.

Competitive conditions in the industry have stimulated the various houses to their utmost in research and production of remedies. A certain phase of medical research has shifted from the medical schools to the pharmaceutical industry. The industry allocated one hundred and ninety million dollars to research in the current year. The result of these expensive researches is by no means predictable. It is expected that a large part of the expenditures in any field will be unproductive. The net result, however, is that we have the most effective drugs and are advancing at the most rapid rate of any time in history.

Answering the contention that the public has had to pay too much for what it has received, many facts are to be considered. One of the first of these is when and in what guise outside of socialism is the federal government to undertake to say what the profit from an enterprise should be. Again, dividends per share in the largest pharmaceutical companies vary from 0.5 per cent to 2.7. An inquiry to seven of the most important houses brought out the fact that they were allotting from 1.3 to 15.7 million dollars per year for research, and this represented from 50 to 300 per cent of the annual dividend of the respective companies. The average for the pharmaceutical industry as a whole, was about 13 per cent net profit after taxes. This compares favorably with the general average of stable national American corporations, which runs from about 11 to 16 per cent.

These figures prove that the prices of drugs are not out of line. The critics fail to take into consideration that the cost of the drug must include: research, fail-

ure, production, promotion, and distribution. Interference with the conditions under which the pharmaceutical industry works may stifle initiative and retard progress. To borrow from another editor, let it not be said that American profits are not without honor save in their own country.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

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REGIONAL CONFERENCE A SUCCESS

The Regional Conference on Aging recently held in New Orleans on February 17-18 under the direction of the American Medical Association's Council on Medical Services in cooperation with the State Medical Societies of Arkansas, Mississippi, Texas and Louisiana, was, in our opinion, most successful. The attendance was exceptionally good. More than 500 registered for the meeting. The meeting was held at the Roosevelt Hotel and many outstanding people from all walks of life were in attendance from the sponsoring states.

An excellent program was offered with outstanding and widely known speakers of prominence in their respective fields participating in the Conference.

We had a receptive and attentive audience vitally interested in the health and care of our older citizens.

The following subjects of interest were on the program and treated by most able and well chosen experts in their respective fields of endeavor:

Medicine's Blueprint for the New Era of Aging

Status of the Senior: The Pattern Today

Capabilities of Seniors: An Untapped Resource

Achieving the Promise: Areas for Group Action

Prevention's Role in Successful Aging

Preparation for Living

Positive Health: Today's Objective

Successful Retirement: A Formula for Fulfillment

An Informed Public: A Leadership Obligation

The Basic Challenge Today: A New Attitude Toward Aging

A Look Ahead in Health Care, A Symposium

A Rural Home Care Program

Rehabilitation in Nursing Homes

Progressive Patient Care

Financing Health Services, A Symposium

The Community's Responsibility

The Medical Profession's Role

The Future of Prepayment Plans for Seniors.

The meeting was closed with a Buzz Session with audience participation.

These subjects were treated by essayists well informed and specifically selected for the respective subjects assigned, and they performed in a manner to the credit of their specialties and themselves.

At the luncheon meeting, we were treated to a masterful address by Dr. Milford O. Rouse, Vice-speaker, House of Delegates, American Medical Association, and Dr. Blasingame, Executive Vice-President, American Medical Association spoke Thursday afternoon on "The Future of Prepayment Plans for Seniors".

Space does not permit us to mention all the prominent speakers.

However, we would like to give you the following names of our local doctors who participated rather conspicuously in the program; Dr. W. Robyn Hardy, our President; Dr. O. B. Owens, our President-elect; Dr. Philip H. Jones, one of our delegates to the AMA; and Dr. Robert E. Gillaspie, Chairman, Louisiana State Medical Society Committee on Aging. We were also most ably represented by two of our lay citizens, Mr. Carl Corbin, Editor, New Orleans States-Item and Miss Margaret Moore, Consultant on Nutrition, Louisiana State Board of Health. We are also very appreciative of services of Rev. John F. Keller, Rev. Nat H. Melbert and Rabbi Mendell Silber who gave the invocations.

In closing, we want to congratulate Mr. George W. Cooley, Secretary and Mrs. McConnell, assistant Secretary, AMA Council on Medical Service, and Mr. Roy Miller for their untiring efforts in preparing this program, and for the splendid manner in which the meeting was conducted.

Those of you who missed this meeting lost a golden opportunity to attend a most interesting and instructive program.

A COMPLACENT ATTITUDE WILL NOT WIN

Don't let your drive to defeat the Forand Legislation lapse into complacency. A strong appeal is being made for all Parish and District Societies to continue a strong campaign in your respective areas against any Forand type legislation. Send resolutions from your Societies, Chambers of Commerce, Civic Clubs and other organizations to our Senators and Congressmen, requesting that they oppose this type of legislation (H. R. 4700). Personal letters from every doctor and from as many of their patients as is possible should also be sent. Send copies of all resolutions and letters to Representative Wilbur D. Mills, Chairman of the Ways and Means Committee.

This is a fight for your survival, so don't let yourself down.

NOMINATIONS FOR PRESS AWARDS

Since this is the last chance to send in your nominations for Press Awards, we would respectfully request that you submit clippings of any outstanding articles, features, editorials or original series of articles on health or medicine published in your home town or weekly newspapers. It is requested that this information be sent to Society headquarters as soon as possible. The winning newspaper will be presented with the award in Baton Rouge at our Annual Meeting.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

SPRING MEETING SIXTH DISTRICT MEDICAL SOCIETY

The Sixth District Medical Society will hold its Spring meeting on April 2 at 2:30 p. m., Capitol House, Baton Rouge. The program includes:

"Evaluation and Therapy of Bleeding States," by Dr. Charles C. Sprague, New Orleans

"Hypnotherapy, Use and Abuse," by Dr. Russell Monroe, New Orleans

"Rubella in Pregnancy," by Dr. James Atkinson, Baton Rouge

"Clinical Significance of Infections with Acid-Fast Organisms," by Dr. Dwight Danburg, Greenwell Springs

Clinicopathologic Conference—Dr. Bryan Luikart of Baton Rouge, Moderator

In addition, there will be a dinner in the Grand Ball Room, with a reception hour. Guest speaker will be Mr. Edwin Bernard, Executive Vice-President, Edison Electric Company, New York, who will speak on "The Role of the Physician in Preserving Freedom in the U. S. A."

This program is being co-sponsored by the Louisiana Academy of General Practice, and is approved for 3 hours credit, Category 1.

RADIOLOGICAL SOCIETY OF LOUISIANA

The Radiological Society of Louisiana met recently and the following new officers were elected: Meyer D. Teitelbaum, M. D., New Orleans, President; Agrippa G. Robert, M. D., Baton Rouge, Vice-President; and Robyn Hardy, M. D., New Orleans, Secretary-Treasurer.

NEWS RELEASE FROM SOUTHERN MEDICAL ASSOCIATION

The Section of Ophthalmology and Otolaryngology of the Southern Medical Association announces that they are now accepting papers by physicians of either specialty living in the area of the Southern Medical Association for consideration for presentation at the next annual meeting to be held in St. Louis, Missouri from October 31 to November 3, 1960.

The paper or an abstract of the paper may be sent directly to the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington, West Virginia as soon as possible.

TRUDEAU SCHOOL OF TUBERCULOSIS and OTHER PULMONARY DISEASES

Forty-Fifth Session

1960

The Trudeau School of Tuberculosis and Other Pulmonary Diseases, which will hold its Forty-fifth Session from June 6th to 24th, 1960, continues to provide a unique opportunity for training in the field of chest diseases. This annual postgraduate course, conducted under the auspices of the Trudeau Foundation and supported by the Hyde Foundation, is able to provide outstanding instruction at a minimal tuition of $100.00 for a three weeks session. Attendance at the Trudeau School carries with it some distinction as well as a thorough review for specialization in pulmonary diseases or for work in public health involving tuberculosis.

In addition to the local medical faculty consisting of some forty doctors from Saranac Lake, Ray Brook State Tuberculosis Hospital and Sunmount Veterans Administration Hospital, about thirty of the leading teachers and investigators in the Eastern United States and Canada are brought to Saranac Lake each year to lecture or to conduct seminars in their special fields.

Approximately half of the time is devoted to tuberculosis and the other half is divided between such subjects as silicosis, pulmonary fibrosis, emphysema, fungus infection, sarcoidosis, pneumonias and intrathoracic tumors.

The Trudeau School, in its environment, gives its students a chance to combine a great educational experience with an enjoyable holiday in

the most beautiful part of the Adirondacks, among pleasant companions. The enrollment is necessarily limited and therefore application should be made early. A few scholarships are available for those who qualify.

All inquiries should be addressed to the Secretary, Trudeau School of Tuberculosis and Other Pulmonary Diseases, Box 500, Saranac Lake, N. Y.

WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The program of the West Virginia Academy of Ophthalmology and Otolaryngology has now been completed for their annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia, April 10-12, 1960.

Among the guest speakers will be:

Dr. Harold G. Scheie, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania. "The Surgical Management of Glaucoma" Part I and Part II

Dr. Charles E. Iliff, Associate Professor of Ophthalmology, John Hopkins University School of Medicine, Baltimore, Maryland. "Adult Ocular Tumors"

Dr. Oscar T. Becker, Clinical Associate Professor of Otolaryngology, University of Illinois School of Medicine, Chicago, Illinois. "Plastic Surgery in Otolaryngology"

Dr. Helen J. Ossofsky, Assistant Professor of Pediatrics, Georgetown University, Washington, D. C. "Pediatric Ocular Tumors"

Dr. John T. Dickinson, Department of Otology, University of Pittsburgh, Pittsburgh, Pennsylvania. "Modern Treatment of Otosclerosis"

There is a non-member registration fee of $10.00 to cover all the social and scientific sessions. For further information contact the secretary, Dr. A. C. Esposito, First Huntington National Bank Building, Huntington, West Virginia.

TULANE LECTURESHIP IN SOCIAL PSYCHIATRY

The second annual lecture in social psychiatry at Tulane University will be delivered by Dr. John Whiting, Director of the Laboratory of Human Development of the Graduate School of Education at Harvard University. The title of the series of two lectures he will give is Social Structure and Child Rearing. The lectureship in social psychiatry is made possible by a grant from the Mona Bronfman Sheckman Foundation of New York City. Lecturers are alternately a psychiatrist and a social scientist. Co-chairmen of the lectureship are Dr. Forrest E. LaViolette, professor and chairman of the department of sociology, and Dr. Harold I. Lief, associate professor of psychiatry. Dr. Whiting's lectures will be held at Tulane University, March 17 and 18, 1960.

SALK VACCINE REACTIONS ARE ONE IN A MILLION

Reported reactions to Salk polio vaccine thus far are so low as to make it unique among immunizing agents, according to Dr. Charles N. Christensen, Indianapolis.

Writing in the Oct 17 Journal of the American Medical Association, Dr. Christensen, medical division of Lilly Research Laboratories, said there have been only 284 reaction complaints in connection with 184,000,000 doses of Eli Lilly and Company manufactured vaccine. Of these, only 146 could be called possibly significant—a complaint rate of 1 per 1,200,000 doses.

One hundred thirty-eight complaints were of burning or stinging pain on injection and were regarded as less significant.

In six instances a clinical picture resembling polio was recorded. Weakness in the extremities not diagnosed as polio was reported three times, according to the article. In two patients it was transient. In the third case, an adult developed weakness in his left leg after a second injection and more severe weakness after a third injection.

Dr. Christensen stated that evaluation of polio possibly caused by the Salk vaccine is difficult, since some of the millions of persons immunized almost certainly were infected at the time of vaccination — or they acquired infection soon after receiving the vaccine.

He concluded, "It seems likely that cases of poliomyelitis which occurred after injections of the vaccine were coincidental to its use."

Nine cases of encephalities were reported. In none of these were laboratory data available to identify the cause of the disease, according to the article.

Allergic reactions also were considered a potential hazard. But in 1954 when 7,507 children were test inoculated, only one instance of hives was encountered.

Penicillin also has been incriminated as a cause of allergic reactions after vaccination. It is impossible to omit antibiotics from the manufacture of Salk vaccine, Dr. Christensen noted, since they are essential to the prevention of bacterial contamination of the tissue culture. He pointed out that the incidence of allergic reactions has been so low, it has become difficult to determine if the vaccine itself was responsible. A very high degree of penicillin sensitivity would have to exist—a sensitivity so high that it is rarely found, he continued.

The one-in-a-million complaint figure is based on all complaints received from physicians, and in many cases the physician indicated he did not believe the reaction was related to the Salk

vaccine. He reported either for information or in the course of an inquiry, according to Dr. Christensen's article.

ARTIFICIAL KIDNEY HAS FEW LIMITATIONS

The artificial kidney can be used to treat just about anyone, whether he is very old, very young, or very ill, the machine's inventor said recently.

Dr. Willem J. Kolff and his associate, Dr. William A. Kelemen, Cleveland Clinic Foundation, said if the machine is skillfully used it carries little danger.

Their statement appears in the Oct. 3 Journal of the American Medical Association.

The artificial kidney consists of a cellophane coil resting in a stainless steel tub containing a special solution. A plastic tube is connected to a leg artery and the blood is forced into one end of the cellophane coil. The blood flows through the coil and back into the body through a tube connected to a vein in the arm.

The machine duplicates the work of the kidneys, removing poisons and chemicals from the blood. It is used in uremia and other conditions in which the kidneys fail to work. It is also used when a person has been poisoned, since it can remove poisonous substances 20 times faster than the kidneys.

All major medical centers have the machines and a trained team of physicians to operate them.

The changes in blood volume produced by the use of the artificial kidneys can cause shock or abnormally rapid blood movement, the doctors said. These have been considered to be especially dangerous for the very young, the very old or the very ill. However, skillful use of the machine can prevent them, the doctors said.

The machine should be used whenever there is the slightest possibility of recovery, they said, adding, "When the recoverability of a patient is questionable, he should be given the benefit of the doubt."

The advantages and almost certainty of clinical improvement whenever uremia or fluid retention play a part in the illness far outweigh the alleged dangers of the machine, they said.

1,100 PERSONS HELP SET ASSOCIATION'S POLICY

The American Medical Association's broad activities for helping to improve the nation's well-being "sprout from a tree measuring a figurative 1,100 people high," according to the association's Oct 10 Journal.

These persons, many of whom serve in weekend and late night sessions, donate as many as 100 hours yearly to the association. None is on the A.M.A. payroll.

"The volunteering M.D.'s (and Ph.D.'s and LL.D.'s and B.A.'s too) range in name from A to Z and come from all 50 states," the Journal article said. - "Their talents enrich 13 A.M.A. councils, more than 100 committees, 20 sections of the Scientific Assembly, 10 specialty journals, and approximately a dozen liaison groups with other organizations."

In addition, there are members of the Board of Trustees and the House of Delegates, the group who makes the final policy decisions for the A.M.A.

NEW CLUE TO CAUSE OF LUPUS ERYTHEMATOSUS FOUND

The outlook for lupus erythematosus, a disease long considered to be very serious and nearly always fatal, is not so bleak after all, two Detroit doctors said recently.

Reporting a study of 100 cases in the Oct. 24 Journal of the American Medical Association, Drs. Clarence E. Rupe and Stewart N. Nickel, Henry Ford Hospital, said the disease is more benign than previously suspected. They also offered a clue to the possible cause of the disease.

Lupus erythematosus, also called LE, was once considered to be only a skin disease, because of its typical butterfly pattern of rash across the bridge of the nose. However, it is a systemic disease, affecting the joints and such organs as the liver and kidneys.

Treatment with artificial hormones, such as those used for arthritis, has a beneficial effect on the disease process by slowing it down and by carrying the patient through crises which once would have been fatal.

The benign course of the disease was illustrated by the fact that only 2 per cent of the total group "proceeded to incapacity," the doctors said. In addition, more than half of the men remained in good health and at full capacity.

Fifty of the patients survived the disease at least 10 years after the onset, and 45 of these are still living. Duration of the disease ranged from 10 months to 36 years.

The clue to a possible cause of the disease lies in the fact that many of the patients had streptococcic infections just prior to the onset of LE. Many had typical "strep throat" infections, while others had other streptococcic infections, such as boils or ear infections. This suggests that hypersensitivity to the streptococcus bacillus may be an important factor in the disease, the doctors said, adding that this association may eventually produce a means of prevention.

BOOK REVIEWS

Emergency War Surgery. NATO Handbook. U. S. Armed Forces issue of Nato Handbook prepared for use by the Medical Services of NATO Nations. Washington, D. C. Government Printing Office. 1958, pp. 411, Price $2.25.

In his foreword to *Emergency War Surgery*, subtitled *NATO Handbook*, Dr. Frank B. Berry, Assistant Secretary of Defense (Health and Medical), explains the origin of this manual. It is the modification, for the use of the U. S. Armed Forces, of the NATO Handbook developed at SHAEF by a committee of three surgical consultants representing the military medical services of France, the United Kingdom and the United States. These consultants were assisted by observers and written recommendations from other NATO nations.

One must applaud the concept of developing a uniform guide to surgical practices for all members of the NATO alliance. This is in line with present-day efforts to strengthen the alliance in all respects; not the least important of these is the efficient accomplishment of humanitarian endeavors. Equally, one must applaud the provision of a single surgical manual for the use of all U. S. Armed Forces, Army, Navy and Air Forces. This is as it should be. There are no fundamental differences in trauma as it occurs in any service, and there should be no fundamental differences in the principles and techniques of its management. This book, as Dr. Berry has well expressed it, is intended "For the attainment of uniform guidance . . . the better to accomplish our joint medical responsibilities."

This small text of only 411 pages, including the 33-page index, is ample testimony to the truism that good things can and do come in small packages, and, it might be added, extremely attractive packages. On first glance, the possibility of covering such a vast subject as emergency war surgery in a single volume, much less so small a volume, in anything but a superficial fashion seems almost preposterous. It is not necessary, however, to read many chapters to realize that this objective has been accomplished. The anonymous authors have managed to include all the basic principles and techniques of this type of surgery and have done it superbly.

The book is beautifully produced and printed, on excellent quality paper. The silver lettering and silver Department of Defense seal on the flexible black leatherette cover make it distinctive. It was sized to fit the hip pocket of the field uniform, and civilian physicians, to whom it is most heartily recommended, should have no difficulty in stowing it away either.

The book is divided into four sections, (1) types of wounds and injuries, (2) the response of the body to wounding, (3) general considerations of wound management, and (4) regional injuries. An introductory chapter deals with general considerations of forward surgery, and there are two appendices. The first is a glossary of drugs with national nomenclatures. The second is a collection of useful tables.

At the end of each chapter is a brief presentation in which the content of the special chapter is related to the management of mass casualties. This is a timely, grimly realistic note, which should impress us once again with the realization of how near such a disaster may be.

One thing that promptly fascinated this reviewer was the span of time and medical knowledge implied in this book. There are, as just noted, sections on the management of casualties in thermonuclear war, and there is a chapter on radiation injuries, with which, as yet, we have had mercifully little experience. But there is also a chapter on cold injury, which plagued the soldiers of Alexander of Macedon, which accounted for some of Napoleon's worst defeats, and which was still a major problem in World War II and the Korean War. The discussion of air evacuation strikes another very modern note. No doubt, as time passes, this method will be used more and more. Helicopters proved most useful in Korea and Lebanon. But air evacuation is not the universal answer, and a thoughtful reading of the discussion of the indications and contraindications for its use is recommended to those who believe that it is.

A number of sections and chapters deserve special comment:

1. The introductory chapter on administrative considerations sets forth the first thing which a newly inducted medical officer must learn. There is a logistic problem in the care of every battle casualty, and without due regard for it, he cannot provide the best medical care for his patients, no matter what his surgical talents may be.

2. The chapter on missile wounds makes very clear another fact which the newly inducted medical officer must be made to realize before he begins to handle combat casualties. This is that the damage caused by a missile extends far beyond its evident track. Until the military surgeon grasps that fact, debridement, which is the basis of all war surgery, will be incomplete, and infection, hemorrhage, and death may be the consequences.

3. The chapter on shock is admirable. Here, in 15 pages, there are presented the pathogenesis of the condition; the physiologic disturbances which it produces—or which produce it; the patterns which it may assume and which are set forth in an excellent table (p. 100); the principles of resuscitation; the selection of replacement fluids; and the precise amounts of these fluids to be employed in special circumstances.

4. In the same section of the book, on the response of the body to injury, is an equally admirable discussion of the renal factor in trauma and the puzzling, highly fatal condition known as lower nephron nephrosis. Like shock, this is a difficult subject to present clearly, but it is well presented from every standpoint. Like shock, it also illustrates one of the desirable features of the book, that all material on the same subject is discussed under a single heading, with cross references taking care of other areas in which the subject appears.

5. The chapter on infection is crammed with valuable information and with sound advice on prevention and management, including the rational use of antibiotics. The discussion of gas gangrene deserves particular mention. Surgeons of this generation see practically nothing of it in training or practice and they may fail to realize what a terrifying possibility it is in every combat wound which is not properly managed.

6. The whole section on general considerations of wound management deserves careful study. It begins with the sorting (triage) of casualties, on the performance of which a man's life may be saved or lost. It goes on to anesthesia and then to special categories of wounds (soft tissue, vascular, bone and joint, peripheral nerve, and amputation). It may seem odd for a medical officer who served through the North African and Italian campaigns to say, but it is true, that this is the only really adequate description of the principles and details of debridement which he has ever seen.

7. It was a wise plan to have a special section on regional injuries. The chapters on the chest and abdomen are detailed and thorough. A word should also be said about the excellence of the chapters on craniocerebral and spinal cord injuries, which the inexperienced ambulance interne is particularly likely to mishandle.

This book covers the important principles and techniques which a military surgeon needs to know. It also emphasizes what he needs to know to keep out of trouble. It is especially timely for the present generation of surgeons trained in modern hospitals, who have every bit of needed equipment on hand and trained personnel always at their elbows. When they encounter the casualties of future wars, they will have to shift their mental gears and make haste quickly to make do with what—if anything—is at hand, to improvise what is lacking, and to manage with the help—if any—which is available.

If principles set forth in this book are clearly understood and are correctly applied under field conditions, from the battlefield back through the evacuation hospital, lives and limbs will be saved. It is unfortunate that a book of this kind, logically organized, emphasizing principles yet describing details, free from ambiguities, and reading smoothly and interestingly, was not available when the United States entered World War II. It might have saved the months which elapsed before concepts were clarified and principles and practices standardized.

This is a book which every medical student should own; the schools which are requiring its purchase have taken the proper action. Every interne and every resident should have his own copy. There should be copies in every hospital accident room. Physicians in general practice and practitioners of surgery and the surgical specialties will find it useful for quick reference, for a summarization of modern principles and techniques; it is as up-to date as a current medical journal.

A special word of approval should go to the index, which is clear and complete. The table of contents is unusually detailed, but the book would have lost a large part of its usefulness without a detailed index.

Indeed, almost the only omission which comes to this reviewer's mind is the lack of a bibliography, which is understandable in view of the purposes of the manual. The comment is added, however, because one of the side-effects of this book is the stimulus which it provides to additional reading on the various subjects covered, particularly physiopathologic subjects. This reviewer, familiar with many of the comprehensive modern texts and finding many of them frankly hard reading, has been stimulated to return to them now that he has read the concise, clear, interesting summaries in this small book.

The authors and editors of *Emergency War Surgery* deserve the thanks not only of the medical officers of the three branches of the Armed Services but also of the whole medical profession. The Government Printer also deserves gratitude; at $2.25, this is indeed one of the best bargains of the year.

H. Reichard Kahle, M. D.

Medical Department, United States Army, Surgery in World War II. Neurosurgery, Volume I: Prepared and published under the direction of Major General S. B. Hays, The Surgeon General United States Army; Editor in Chief, Colonel John Boyd Coates, Jr., MC; Editors for Neurosurgery, R. Glen Spurling, M. D., and Barnes Woodhall, M. D.: Associate Editor, Elizabeth M. McFetridge, M.A. Washington, D.C., Office of The Surgeon General, Department of the Army, 1958. 466 pages; illustrated. Washington, D. C., Government Printing Office. Price $5.00.

This book, the first of two volumes dealing with neurosurgery in World War II, is a comprehensive account of the administrative background of this specialty and of the problems of head injuries sustained in combat and their man-

agement. The second neurosurgical volume, now in press, will cover injuries of the spinal cord and of the peripheral nerves.

Any physician who has served in the Armed Forces will understand why 86 of the 399 text pages of this volume are devoted to administrative considerations: No matter what he believed when he entered the service, he promptly learned that the most efficient application of his professional skill was impossible without a background of sound logistics.

One of the editors of the neurosurgical series, Dr. (then Major, later Colonel) R. Glen Spurling, set up the first such service in the Army at Walter Reed General Hospital in May 1942. As this volume makes clear, there was no specialty of neurosurgery in the U. S. Army when this country entered World War II. In fact, neurosurgery had only recently become a sharply defined surgical specialty; the American Board of Neurological Surgery had begun to function only a few months before Pearl Harbor.

Of the many important administrative accomplishments during the war, two are of special significance. The first was the establishment of specialized neurosurgical centers, 19 in the United States, 12 in the European Theater of Operations, and one in the Mediterranean Theater. Without such a concentration of casualties, neurosurgeons, and neurosurgical equipment, it would have been impossible, professionally or numerically, to provide for these casualties the superb care which they received. They constituted about 10 per cent of all battle casualties, and numerically they were next in order to orthopedic casualties.

The second highly significant administrative achievement was the rapid training in neurosurgical principles and techniques of some 125 young, well trained general surgeons. After their training these medical officers worked under the supervision of the very limited number of experienced neurosurgeons in the Army, and, later, many of them held positions of independent responsibility. To them is due a major part of the credit for the superb care which neurosurgical casualties received. In the opinion of many observers, the demonstration of the feasibility and value of this mode of specialty training (it was also employed in other specialties) was one of the outstanding medical accomplishments of the war.

The results of peripheral nerve injuries in World War I had not been good, and the results of spinal injuries were dismal. Under the guidance of the late Harvey Cushing, however, the mortality of head injuries had been enormously reduced before the end of the war, and the management of these injuries in World War II was built on the firm foundation which he laid in the First World War. In the Second World War, sound resuscitative practices, including the liberal use of whole blood, adequate debridement, and, when necessary, bold re-debridement, probably accounted, even more than penicillin, for the greatly lowered mortality in these injuries. Infection was never the problem which it had been in World War I.

New techniques were also introduced, including reconstructive surgery with tantalum plates—now generally replaced by acrylin plates—and operations for the management of such complications as brain abscess and fungus cerebri.

The very complete table of contents shows that there is no conceivable phase of head injuries and their complications which is not dealt with comprehensively and conclusively in this volume. The story of the management of these injuries begins on the battlefield and is carried through their sequelae, including skull defects, speech defects, and post-traumatic epilepsy. The final chapter, a study of the endeavor—the unsuccessful endeavor—to identify inherently lethal head injuries is not the least interesting in the book. The implication of the failure of the endeavor was one of the chief reasons for the brilliant results which neurosurgeons achieved in World War II: It was their reluctance to admit that any wound was inherently lethal. The remarkable case history which ends this chapter is fascinating proof of the unconquerable spirit of both the neurosurgeons and the casualties for whom they cared.

The neurosurgical editors explain in their preface that the material for both neurosurgical volumes was prepared immediately after the war ended but was not published then because of a fundamental disagreement between themselves and the administrative personnel in the Historical Division of the Surgeon General's Office. The editors considered the clinical story of neurosurgery true history, as indeed it is; the administrative personnel did not. The material therefore languished in the Historical Division from 1947 until 1956, when, under new and more understanding policies, it was revived and re-written. It is unfortunate that both volumes were not ready for use in the Korean War. Nonetheless, the knowledge and experience gained in World War II were available and were put to full use. The neurosurgeons who worked in Korea therefore achieved an even lower mortality for head injuries than the low mortality which had been achieved in World War II. Neurosurgical personnel were still in short supply, but the front line was fairly static, helicopter evacuation was efficient, and the casualty who was alive when he reached a MASH installation in Korea had an excellent chance for survival.

The reader is impressed, as soon as he handles this book, with the excellence of the production, including the quality of the paper, the typography, and the fine reproduction of the well selected diagrams and illustrations. The editors, Dr. R.

Glen Spurling and Dr. Barnes Woodhall, chose the authors of the various chapters as admirably as they outlined the subject matter. The book is blessedly free from the documentation and footnotes which are distracting features of so many government publications. The documentation is not missed: The editors and authors serve as their own documentation, for they write with the authority of those who were there and who helped to create the data which they have recorded.

One of the virtues of the book is a very complete index. Sample testings fail to show anything omitted from it.

This reviewer was deeply impressed by the time and effort which must have gone into this volume from the moment it was conceived. It is complete in all respects, and the writing, which is clear, lucid, and interesting, is obviously the product of long and hard work. Such results do not just happen.

The time and effort were well spent. Anyone who is concerned with head injuries will find the reading of this book a rewarding experience. The book is a history of neurosurgery in World War II, but it is also an encyclopedia of the surgical management of head injuries. It deals with combat-incurred head injuries, it is true, but the principles set forth, as well as many of the techniques, can be readily and profitably applied to the management of the head injuries that, unfortunately, are making up an increasingly large part of civilian practice in this age of increasing mechanization.

Everyone connected with the preparation and publication of this volume is to be congratulated upon what has been achieved in it.

RAEBURN C. LLEWELLYN, M. D.

Atrial Arrhythmias, Digitalis and Potassium, Lown, B., and Levine, H. D., New York, N. Y., Landsberger Medical Books, Inc., 1958, Pp 222. Price $6.90.

Drs. Lown and Levine gather in this volume a summary of their own work and the pertinent literature concerning an arrhythmia associated with digitalis intoxication: paroxysmal auricular tachycardia with incomplete atrioventricular block. They particularly examine the role of a deficiency of body potassium in sensitizing the myocardium to digitalis and thus also of the combined effect of potassium deficiency and digitalis in producing P. A. T. with block. Careful attention is given to the differential diagnosis of paroxysmal auricular tachycardia with block and the atrial rhythms (tachycardia and flutter) with which it is frequently confused. Particular emphasis is placed upon the underlying clinical state (sometimes the administration of digitalis in large amount and sometimes in lesser amount in the face of electrolyte disturbances—especially those with obvious potassium loss) and upon the peculiar variability of atrial rate in the toxic rhythm as compared with the others.

The authors are properly cautious in their construction of the hypothesis as to the mechanism of this arrhythmia but offer sufficient clinical observations as to its diagnosis and treatment to make the text recommended reading for physicians who administer digitalis or who treat disturbances of cardiac mechanism or electrolyte balance.

L. G. HORAN, M. D.

Vertigo and Dizziness; by Bernard J. Alpers, New York, N. Y., Grune & Stratton, 1958, pp. 120. Price $5.00.

This monograph is written by a neurologist on a subject of special interest to otolaryngologists and internists as well as neurologists. Although the text is but 99 pages in length, it is surprisingly thorough and very understandable.

A brief review of the anatomy and physiology of the vestibular system is included along with a clear explanation of mechanisms involved in the production of vertigo. Finally, a thorough analysis of symptoms and signs, causes, diagnosis and therapy of the varied causes of vertigo are discussed.

L. J. RUTLEDGE, M. D.

Regional Ileitis; by Burrill B. Crohn, and Harry Yarnis, Grune & Stratton, New York-London. 1958.

Who is better qualified to write a book on Crohn's disease than Crohn? The book reports Dr. Crohn's experiences with more than 700 cases of regional ileitis. Despite this, the book contains few answers to specific problems. One gets the impression that little new information has been accumulated since the original description of the disease in 1932.

FRED M. HUNTER, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., N. Y.: The Cigarette Habit: A Scientific Cure, by Arthur King; The Teen-Age Years, by Arthur Roth, M. D.; The Reluctant Surgeon: A Biography of John Hunter, by John Kobler; Your Heart—A Handbook for Laymen, by H. M. Marvin, M. D.

Grune & Stratton, N. Y.: Diagnosis and Treatment of Tumors of the Chest, sponsored by the American College of Chest Physicians and edited by David M. Spain, M. D.

The C. V. Mosby Co., St. Louis: Textbook of Otolaryngology, by David D. DeWeese, M. D., and William H. Saunders, M. D.; Drugs of Choice 1960-1961, edited by Walter Modell, M. D.

W. B. Saunders Co., Phila.: Current Therapy —1960, edited by Howard F. Conn, M. D.; Christopher's Textbook of Surgery, edited by Loyal Davis, M. D. (7th edit.).

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ALDACTONE acts by blocking the effect of aldosterone, the principal mineralocorticoid governing the reabsorption of sodium and water in the distal segment of the renal tubules.

By so doing Aldactone establishes a fundamentally new and effective approach to the control of edema or ascites, including edema resistant or unresponsive to conventional diuretic agents.

Further, because of its different site and mode of action in the renal tubules, Aldactone has a true, highly valuable synergistic activity when used with a mercurial or thiazide diuretic.

What Physicians May Expect of Aldactone

It is fully expected that Aldactone will change present medical concepts of the therapeutic limitations of managing edema. Many patients living in a greater or lesser state of edematous invalidism can now be edema-free. To others, gravely ill, Aldactone will be life-saving.

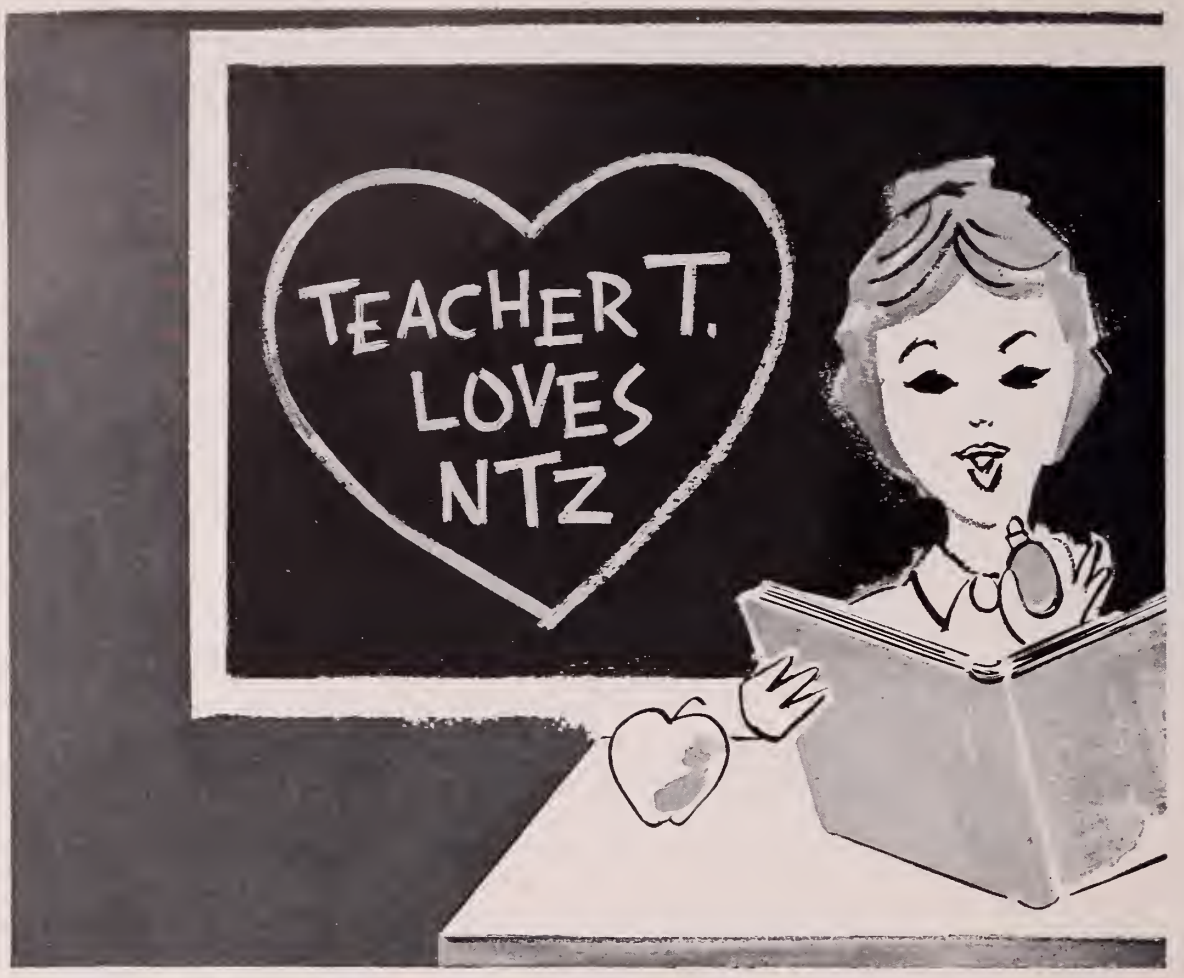
When used alone, Aldactone will produce a satisfactory diuresis in about half of those patients whose edema is resistant to conventional diuretic agents.

When Aldactone is used in a comprehensive therapeutic regimen, which includes a mercurial or a thiazide diuretic, a satisfactory diuresis and relief of edema may be expected in approximately 85 per cent of edematous patients *who would not otherwise respond.*

DOSAGE: For most adult patients the optimal dosage of Aldactone, brand of spironolactone, is 100 mg. four times daily. Aldactone should be administered for at least four or five days before appraising the initial response, since the onset of therapeutic effect is gradual when it is used alone. Aldactone manifests accelerated activity with greater response as early as the first and second days when used in combination with a mercurial or thiazide diuretic.

SUPPLIED: Aldactone is supplied as compression-coated yellow tablets of 100 mg.

G. D. SEARLE & CO.
Chicago 80, Illinois
Research in the Service of Medicine



**In her book,
the lasting relief from colds
puts NTZ Nasal Spray
in a class by itself.**

NTZ® NASAL SPRAY

*20 cc. spray bottles;
also 1 oz. bottles with dropper*

Neo-Synephrine® HCl, 0.5%
—unexcelled decongestant—

Thenfadil® HCl, 0.1%
—topical antihistaminic—

Zephiran® Cl, 1:5000
—antibacterial spreading agent—

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Potentiated Relief for Colds...Sinusitis...Hay Fever

Synonyms for Pain Relief...

'TABLOID' 'EMPIRIN' COMPOUND®

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½

'TABLOID' 'EMPIRIN' COMPOUND® WITH CODEINE PHOSPHATE*

No. 1

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ⅛

No. 2

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ¼

No. 3

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. ½

No. 4

Acetophenetidin	gr. 2½
Acetylsalicylic Acid	gr. 3½
Caffeine	gr. ½
Codeine Phosphate	gr. 1

*Subject to Federal Narcotic Regulations

...providing the desired gradation of potencies for relief of varying intensities of pain

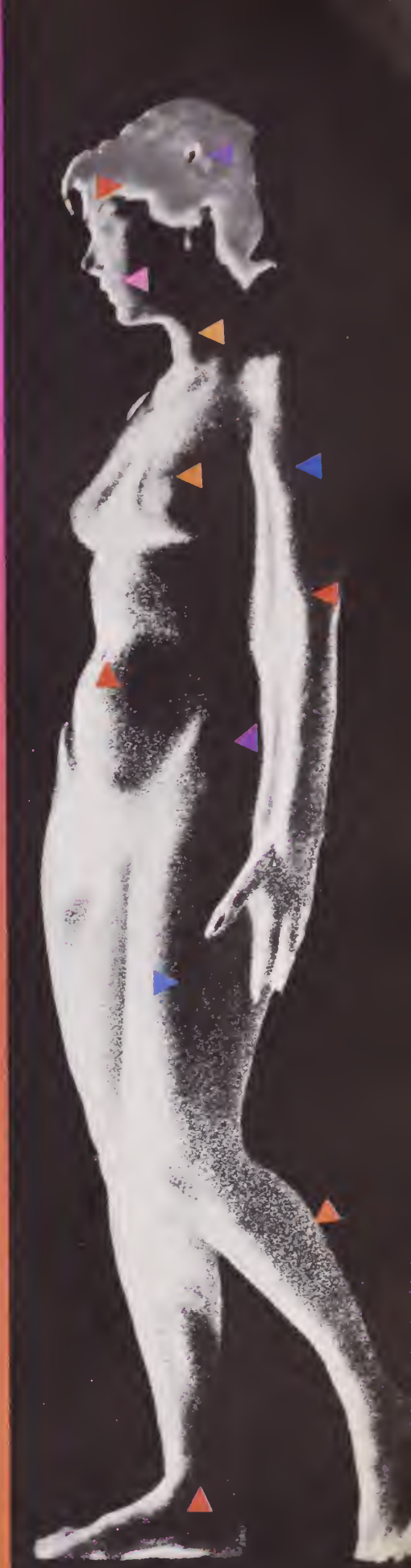
IN

simple headache
rheumatic conditions
arthralgias
myalgias
common cold
toothache
earache
dysmenorrhea
neuralgia
minor trauma
tension headache
premenstrual tension
minor surgery
post-partum pain
trauma
organic disease
neoplasm
muscle spasm
colic
migraine
musculo-skeletal pains
postdental surgery
post-partum involution
fractures
synovitis/bursitis

relief of pain of all degrees of severity up to that which requires morphine

AND IN

fevers
dry, unproductive coughs

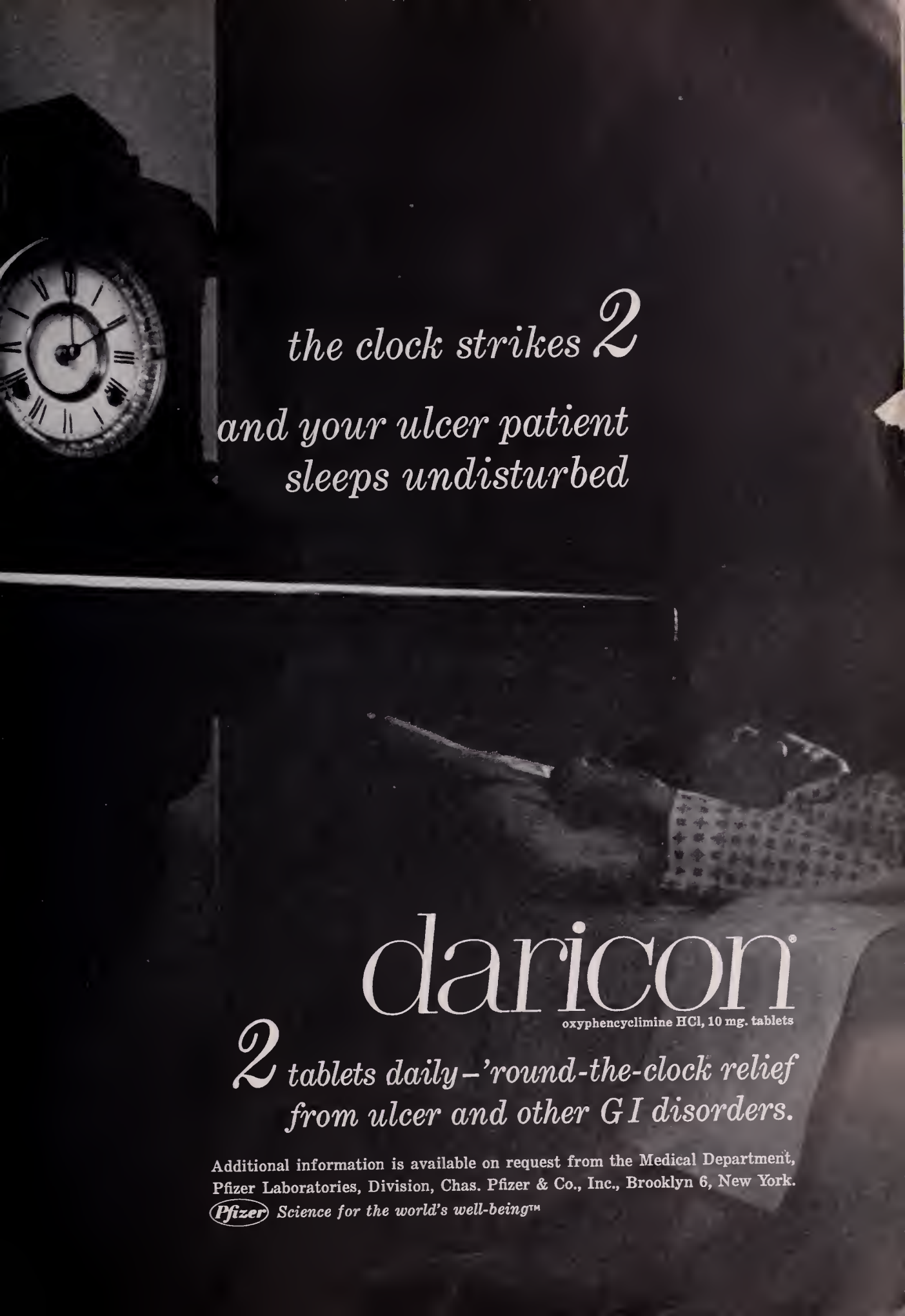


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the clock strikes 2
and your ulcer patient
sleeps undisturbed
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oxyphencyclimine HCl, 10 mg. tablets
2 tablets daily—'round-the-clock relief
from ulcer and other GI disorders.
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when sulfa is your plan of therapy...

pharmacologically and clinically the outstanding

Rapid peak attainment — for early control — KYNEX® Sulfamethoxypyridazine reaches peak plasma levels in 1 to 2 hours[1,2] . . . or approximately one-half the time of other once-a-day sulfas.[2] Uninterrupted control is then sustained over 24 hours with the single daily dose . . . through slow excretion without renal alteration.

High free levels — for dependable control — More efficient absorption delivers a higher percentage of sulfamethoxypyridazine — averaging 20 per cent greater at respective peaks than glucuronide-conversion sulfas.[2] Of the total circulating levels, 95 per cent remains in the fully active, unconjugated form even after 24 hours.[3]

Extremely low toxicity[4] . . . only 2.7 per cent incidence in recommended dosage — Typical of KYNEX relative safety, toxicity studies[5] in 223 patients showed TOTAL side effects (both subjective and objective) in only six cases, all temporary and rapidly reversed. Another evaluation[4] in 110 patients confirmed the near-absence of reactions when given at the recommended dosage. High solubility of both free and conjugated product[6] obviates renal complications. No crystalluria has been reported.

Successful against these organisms: streptococci, staphylococci, E. coli, A. aerogenes, paracolon bacillus, Gram-negative rods, pneumococci, diphtheroids, Gram-positive cocci and others.

1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: Antibiotic Med. & Clin. Ther. 3:378, (Nov.) 1956. 2. Boger, W. P.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: Antibiotic Med. & Clin. Ther. 5:604 (Oct.) 1958. 4. Vinnicombe, J.: Ibid. 5:474 (July) 1958. 5. Anderson, P. C., and Wissinger, H. A.: U. S. Armed Forces M. J. 10:1051 (Sept.) 1959. 6. Roepke, R. R.; Maren, T. H., and Mayer, E.: Ann. New York Acad. Sc. 60:457 (Oct.) 1957.



once-a-day sulfa . . .

NOTE: Investigators note a tendency of some patients to misinterpret dosage instructions and take KYNEX on the familiar q.i.d. schedule. Since one KYNEX tablet is equivalent to eight to twelve tablets of other sulfas, even moderate overdosage may produce side effects. Thus, the single dose schedule must be stressed to the patient.

KYNEX Tablets, 0.5 Gm., bottles of 24 and 100. Dosage: Adults, 0.5 Gm. (1 tablet) daily, following an initial first day dose of 1 Gm. (2 tablets).

KYNEX Acetyl Pediatric Suspension, cherry-flavored, 250 mg. sulfamethoxypyridazine activity per teaspoonful (5 cc.). Bottles of 4 and 16 fl. oz. Recommended Dosage: Children under 80 lbs.: 1 teaspoonful (250 mg.) for each 20 lb. body weight, the first day, and ½ teaspoonful per 20 lb. per day thereafter. For children 80 lbs. and over: 4 teaspoonfuls (1.0 Gm.) initially and 2 teaspoonfuls daily thereafter. Give immediately after a meal.

KYNEX®

Sulfamethoxypyridazine Lederle

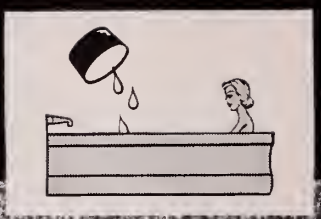
NEW—for acute G.U. infection AZO-KYNEX® Phenylazodiaminopyridine HCl—Sulfamethoxypyridazine Tablets, contains 125 mg. KYNEX in the shell with 150 mg. phenylazodiaminopyridine HCl in the core. Dosage: 2 tablets q.i.d. the first day; 1 tablet q.i.d. thereafter.

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proven successful[1] in almost every case of

skin itch



and

dryness

Used in the bath SARDO releases millions of microfine water-dispersible globules* to provide a soothing, softening suspension which enhances your other therapy. SARDO baths . . .

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2 add comfort to the therapeutic care

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4 minimize loss of natural oil and excessive moisture with a fine non-occlusive film

Patients will appreciate pleasant, convenient, easy to use, pine-scented SARDO. Non-sensitizing. Most economical. Bottles of 4, 8 and 16 oz.

1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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for atopic dermatitis
eczematoid dermatitis
senile pruritus
contact dermatitis
soap dermatitis



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no irritating crystals[1] · uniform concentration in each drop[2]

STERILE OPHTHALMIC SOLUTION

NEO-HYDELTRASOL®

PREDNISOLONE 21-PHOSPHATE-NEOMYCIN SULFATE

2,000 TIMES MORE SOLUBLE THAN PREDNISOLONE OR HYDROCORTISONE

"The solution of prednisolone has the advantage over the suspension in that no crystalline residue is left in the patient's cul-de-sac or in his lashes . . . . The other advantage is that the patient does not have to shake the drops and is therefore sure of receiving a consistent dosage in each drop."[2]

1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

supplied: 0.5% Sterile Ophthalmic Solution NEO-HYDELTRASOL (with neomycin sulfate) and 0.5% Sterile Ophthalmic Solution HYDELTRASOL®. In 5 cc. and 2.5 cc. dropper vials. Also available as 0.25% Ophthalmic Ointment NEO-HYDELTRASOL (with neomycin sulfate) and 0.25% Ophthalmic Ointment HYDELTRASOL. In 3.5 Gm. tubes.

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MSD MERCK SHARP & DOHME Division of Merck & Co., Inc., Philadelphia 1, Pa.

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PEAK BLOOD LEVELS TWICE AS HIGH AS WITH POTASSIUM PENICILLIN V

ORAL ROUTE PROVIDES HIGHER PEAK BLOOD LEVELS THAN INTRAMUSCULAR PENICILLIN G

IMPROVED ANTIBIOTIC ACTION FROM ISOMERIC COMPLEMENTARITY





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POTASSIUM PENICILLIN-152

ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSE

REDUCED RATE OF INACTIVATION BY STAPH PENICILLINASE

MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN IN VITRO

BRISTOL





FOR HIGHLY EFFECTIVE THERAPY OF THE LARGE VARIETY OF INFECTIONS CAUSED BY SUSCEPTIBLE PATHOGENS...NEW

SYNC

Significance of complementary action of isomers in SYNCILLIN

The antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than that of either of its two component isomers alone against many important pathogens, including some penicillin-resistant staphylococci. This phenomenon has been described as *Isomeric Complementarity*.

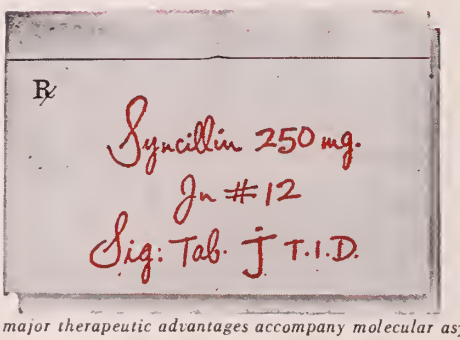
Significance of higher blood levels with SYNCILLIN

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition, these higher levels may be necessary where there is infection in areas with a poor blood supply. Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

Efficacy of SYNCILLIN against staphylococci and other resistant organisms

Studies have shown that SYNCILLIN is effective *in vitro* against 60 to 75% of hospital "staph" strains, while penicillin G and penicillin V are now effective against only 30 to 50%.[1, 2] Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN would be expected to be the most effective. However, since some strains are still resistant to SYNCILLIN as well as to the other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal[3] and gonococcal[4, 5] infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



major therapeutic advantages accompany molecular asymmetry

I L L I N™

Relation of intermittent high blood levels of SYNCILLIN to antibacterial efficacy

SYNCILLIN, like all clinically available penicillins, is bactericidal. Periodic high blood concentrations may be sufficient to permit complete eradication of sensitive pathogens. According to Eagle,[6] "Soon after penicillin attains effective concentrations, the bacteria cease multiplying; and the bacteriostatic effect persists for a number of hours after penicillin has fallen to concentrations that are wholly ineffective. . . . The therapeutic significance of this postpenicillin recovery period is enhanced by the fact that the recovering bacteria, damaged but not killed by the previous exposure to penicillin, are abnormally susceptible to the host defenses. In consequence, the bactericidal process *in vivo* continues for many hours after the drug itself has fallen to ineffective concentrations."

Reduced rate of inactivation of SYNCILLIN by staph penicillinase

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V or penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillin V or G.

Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective against certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. *Therefore, the usual precautions for oral penicillin therapy should always be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, lengthen the interval between dosages.

If superinfection occurs during therapy, appropriate measures should be taken. Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, 1959, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (March 29) 1958. 5. Epstein, E.: J.A.M.A. **169**:1055 (March 7) 1959. 6. Eagle, H. and Musselman, A. D.: J. Bact. **58**:475, 1949.



BRISTOL LABORATORIES, Division of Bristol-Myers Company, SYRACUSE, NEW YORK

ORY-CIN

TROCHES



Antibiotic and Antihistaminic Medication for Common Mouth and Throat Infections

Infections of the mouth and throat are of common occurrence in everyday medical practice. In mild cases ORY-CIN troches will provide prompt and effective relief without internal medication. They may be used as a therapeutic adjuvant to internally administered antibiotics or sulfonamides in more severe conditions.

FORMULATION

ORY-CIN troches are designed to combat the infection, relieve the congestion, and soothe the local irritation. For this purpose three valuable ingredients are combined as follows:

Tyrothricin	1 mg.
Chlorpheniramine Maleate	2 mg.
Benzocaine	5 mg.

in a pleasantly flavored and readily soluble troche base.

INDICATIONS

ORY-CIN lozenges are indicated in the treatment of common infections of the mouth and throat, especially those due to gram-positive organisms including the staphylococcus, streptococcus and pneumococcus.

The lozenges may be used with good results in cases of tonsilities, uvulitis, pharyngitis, glossitis and stomatitis.

DOSAGE AND ADMINISTRATION

One ORY-CIN troche should be held in the mouth and allowed to dissolve slowly. May be repeated every four hours.

AVAILABILITY

ORY-CIN troches are supplied in vials of 16 and bottles of 500.

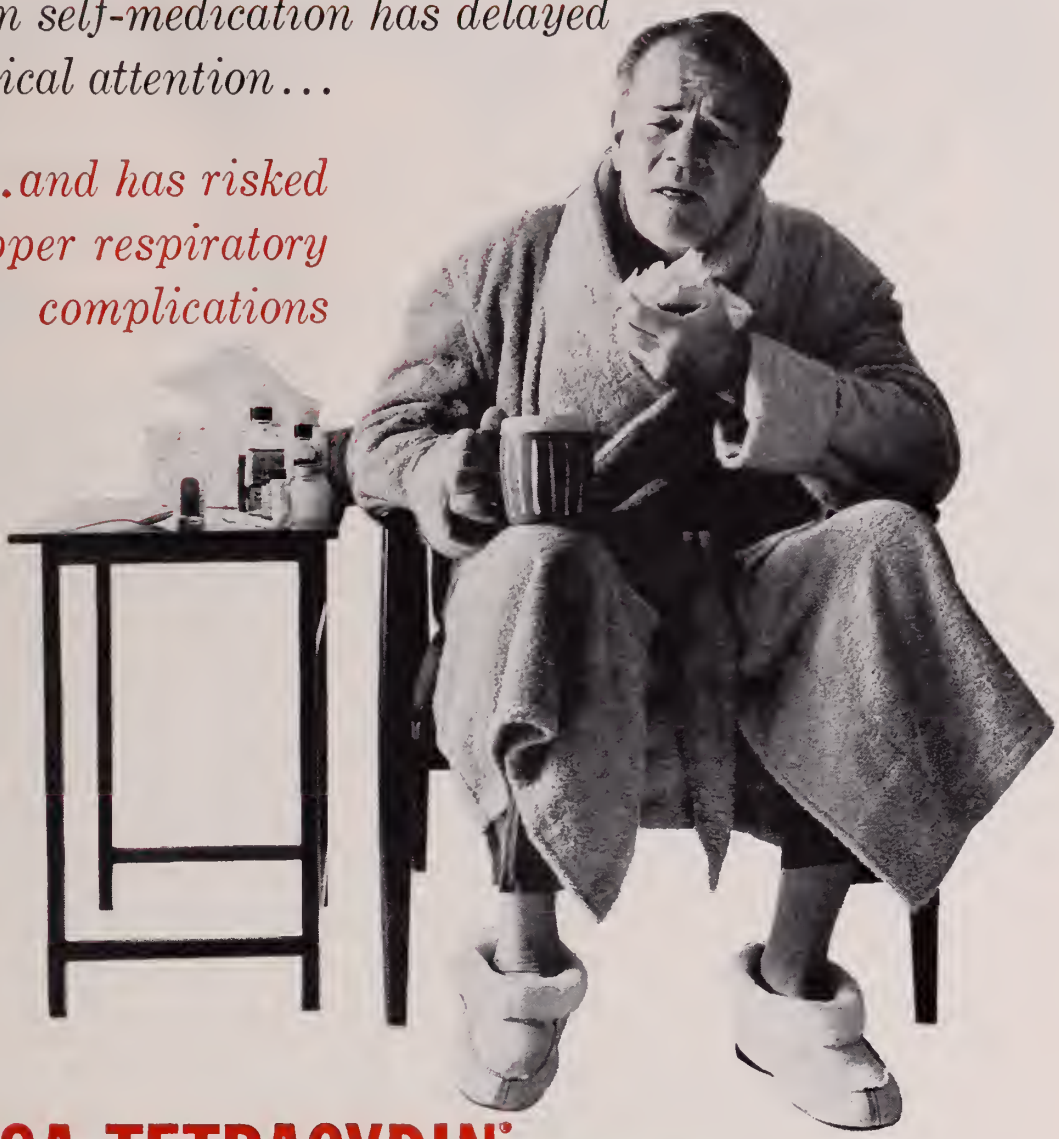
FIRST TEXAS Pharmaceuticals, Inc.

Pharmaceuticals Since 1901

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in the **"COMMON COLD"**
when self-medication has delayed medical attention...

...and has risked upper respiratory complications



COSA-TETRACYDIN® CAPSULES

Cosa-Tetracyn® — analgesic — antihistamine compound

act quickly to

- *control secondary infection*
- *alleviate cold symptoms*

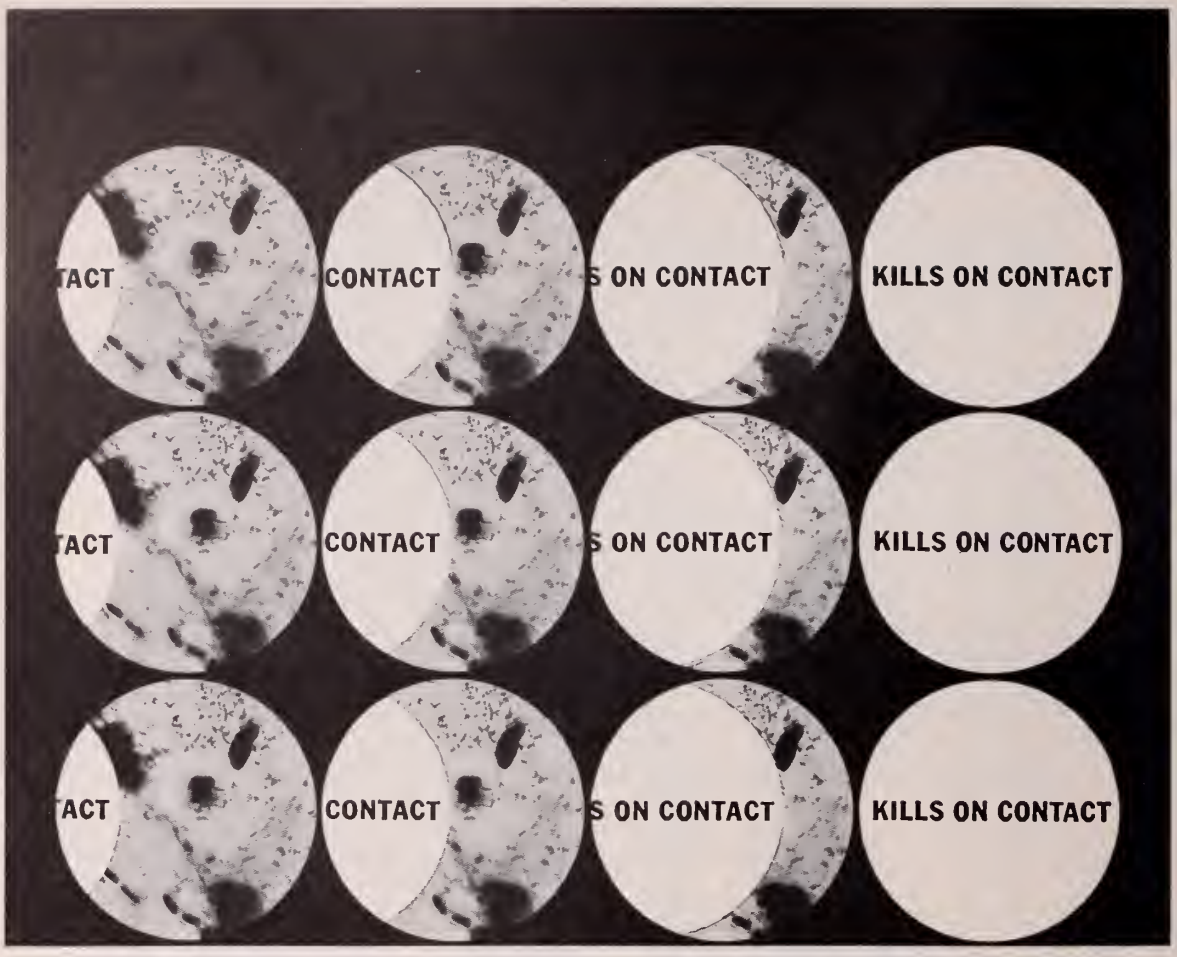
each capsule contains:

Cosa-Tetracyn	125 mg.
phenacetin	120 mg.
caffeine	30 mg.
salicylamide	150 mg.
buclizine HCl	15 mg.

average adult dose: 2 capsules q. i. d.

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KILLS ON CONTACT[1-6] Trichomonads, Monilia and Other Organisms Responsible for Non-Specific Infections in The Vaginal Tract

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(ACTIVE INGREDIENT: POVIDONE IODINE*)

DESTROYS all vaginal pathogens on contact (even in presence of blood, pus, vaginal secretions). **PENETRATES** into vaginal rugae. **STOPS** discharge and pruritus, reduces malodor. **CLEARS** the vaginal tract without irritation or sensitization . . . has been used with considerable success even in difficult and refractory cases.[6]

BETADINE™ VAGINAL GEL should be applied where more prolonged contact is required or when a douche may be inconvenient or contraindicated. **SUPPLIED:** Betadine Douche—8 fl. oz. bottle. Betadine Vaginal Gel—3 oz. tube with applicator.

REFERENCES: 1. Gershenfeld, L.: Am. J. Surg. *94*:938, 1957. 2. Stone, J. D., and Burnet, F. M.: Australian J. Exper. Biol. & Med. Sc. *23*:205, 1945. 3. Reddish, G. F.: Antiseptics, Disinfectants, Fungicides and Chemical and Physical Sterilization, Lea & Febiger, Philadelphia, 1954, pp. 171-211. 4. Chang, S. L., and Morris, J. C.: Engineering Chem. *45*:1009, 1953. 5. Shelanski, H. A., and Shelanski, M. V.: Polyvinylpyrrolidone-Iodine Studies Through 1951, G. A. & F. Corp. 6. Christhilf, S. M., Jr.: Personal Communication.

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Trilafon® perphenazine for the anxiety in the person overwhelmed by family illness... selective anxiety relief with minimal drowsiness or dulling

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The secret of a successful low sodium diet is acceptance

The acceptance of any diet depends on its appetite appeal. And there are so many things your low sodium diet patient can use to add flavor to his daily fare . . . such as the juice of lemons and limes, assorted herbs, variously flavored vinegars and some pepper.

Thyme, marjoram and pepper add zest to hamburger. Chicken is delicious with lemon, rosemary and sweet butter to baste. In fact, sweet butter can be used so many ways on vegetables—with nutmeg on green beans, savory on limas, tarragon with carrots, basil with tomatoes. Onions boiled with whole clove of thyme delight the taste of an epicure!

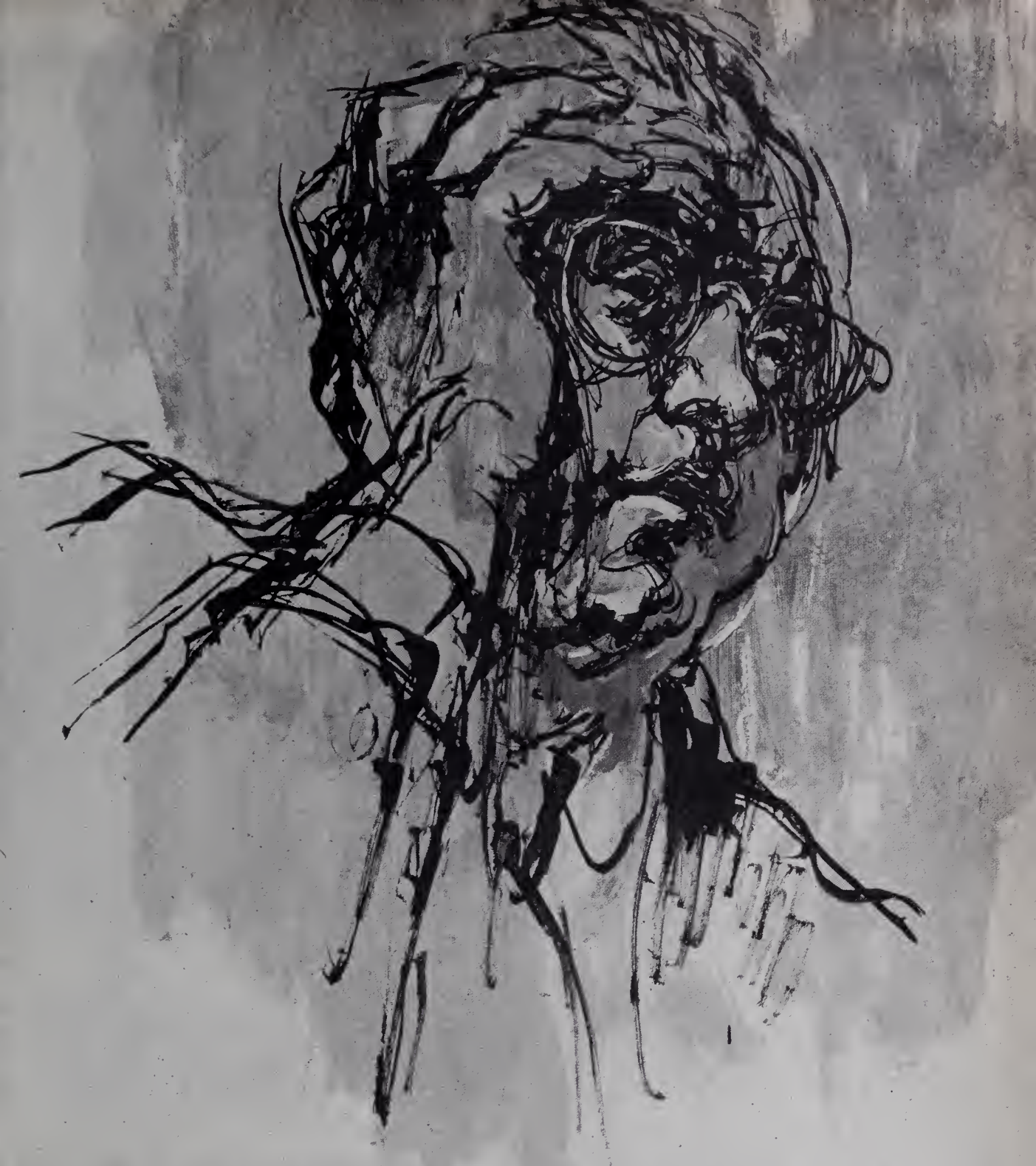


With your approval, your patient might add a glass of beer to his dinner from time to time.

Sodium 7 mg/100 grm.
17 mg/8 oz. glass
(Average of American Beers)

United States Brewers Foundation

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When blood pressure must come down

When you see symptoms of hypertension such as dizziness, headache, and fainting your patient is a candidate for Serpasil-Apresoline. Even when single-drug therapy fails, Serpasil-Apresoline frequently can bring blood pressure down to near-normal levels, reduce rapid heart rate, allay anxiety.

SUPPLIED: Tablets #2 (standard-strength, scored), each containing 0.2 mg. Serpasil and 50 mg. Apresoline hydrochloride; Tablets #1 (half-strength, scored), each containing 0.1 mg. Serpasil and 25 mg. Apresoline hydrochloride.

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brand of imipramine HCl

in depression

lights the road to recovery
in 80 per cent of cases

In the treatment of depression Tofrānil has established the remarkable record of producing remission or improvement in approximately 80 per cent of cases.[1-7]

Tofrānil is well tolerated in usage—is adaptable to either office or hospital practice—is administrable by either oral or intramuscular routes.

Tofrānil
a potent thymoleptic . . .
not a MAO inhibitor.

Does act effectively in *all* types of depression regardless of severity or chronicity.

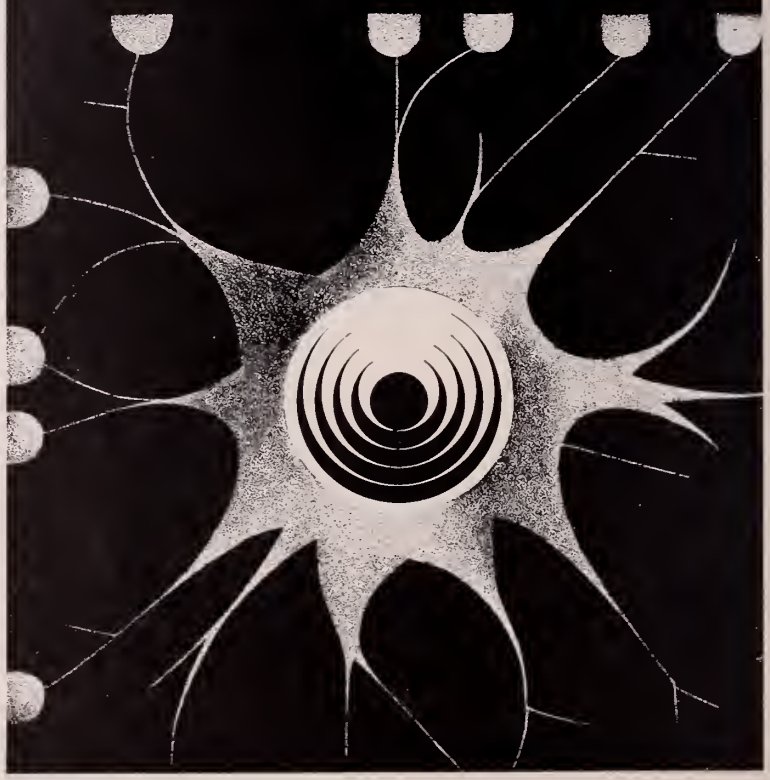
Does not inhibit monoamine oxidase in brain or liver; produce CNS stimulation; or potentiate other drugs such as barbiturates and alcohol.

Detailed Literature Available on Request.

Tofrānil® brand of imipramine HCl: tablets of 25 mg., bottles of 100. Ampuls for intramuscular administration only, each containing 25 mg. in 2-cc. of solution, cartons of 10 and 50.

References: 1. Ayd, F. J., Jr.: Bull. School Med., Univ. Maryland *44*:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. *81*:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. *3*:155, 1958. 4. Mann, A. M. and MacPherson, A. S.: Canad. Psychiat. A. J. *4*:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M.A.J. *80*:540, 1959. 6. Straker, M.: Canad. M.A.J. *80*:546, 1959. 7. Strauss, H.: New York J. Med. *59*:2906, 1959.

Geigy, Ardsley, New York



Geigy

TO4-60

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IN *ORAL* CONTROL OF PAIN

ACTS FASTER—usually within 5-15 minutes. **LASTS LONGER**—usually 6 hours or more. **MORE THOROUGH RELIEF**—permits uninterrupted sleep through the night. **RARELY CONSTIPATES**—excellent for chronic or bedridden patients.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit-forming. Federal law permits oral prescription.

Each PERCODAN* Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. phenacetin, and 32 mg. caffeine.

Also available — for greater flexibility in dosage — PERCODAN®-DEMI: The PERCODAN formula with one-half the amount of salts of dihydrohydroxycodeinone and homatropine.

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Literature? Write
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Percodan® *Tablets*

Salts of Dihydrohydroxycodeinone and Homatropine, plus APC

FOR PAIN

*U.S. Pat. 2,628,185

IN MANY CASES: ENDS THE NEED FOR PAINFUL PENICILLIN INJECTIONS

COMPOCILLIN®-VK
(POTASSIUM PENICILLIN V, ABBOTT)
OFFERS THE HIGH BLOOD LEVELS OF POTASSIUM PENICILLIN V



Available in tiny, easy-to-swallow Filmtabs® and in tasty, cherry-flavored Oral Solution.

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®FILMTAB—FILM-SEALED TABLETS, ABBOTT



Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J E., Briggs, G W., and Hindley, F W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

THE S.E. MASSENGILL COMPANY
BRISTOL, TENNESSEE
NEW YORK • KANSAS CITY • SAN FRANCISCO



AN AMES CLINIQUICK®

CLINICAL BRIEFS FOR MODERN PRACTICE

WHY IS DIABETES IN INFANTS SO DIFFICULT TO DIAGNOSE?

Because of the infrequency of the disease in this age group, its sudden onset, the profusion of inconsistent presenting symptoms, and because the accompanying symptoms of anorexia and vomiting are also characteristic symptoms of many other ills of infancy.

*Source: Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.: Diabetes *8*:289, 1959.

for those pediatric puzzlers..."A routine urinalysis and blood sugar should be done whenever the possibility of diagnosing diabetes is entertained."*

DIABETES MELLITUS AT AGES 1 TO 5

Order of Frequency of Presenting Symptoms in 110 Patients

Symptoms	No. of Patients	Per cent of total group
Polyuria	93	84.5
Polydipsia	89	81.0
Weight loss	47	42.7
Polyphagia	28	25.4
Anorexia	16	14.5
Lethargy	14	12.7
Enuresis	7	6.4
Vomiting	5	4.5
Irritability	3	2.7
"Craving for sweets"	3	2.7
"Sticky diaper"	3	2.7
"Strong odor to urine"	2	1.8
Glycosuria	2	1.8
Hypoglycemia	2	1.8
Personality change	1	0.9
Boils	1	0.9
Headache	1	0.9
Abdominal cramps	1	0.9

Adapted from Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.*

the standardized urine-sugar test for reliable quantitative estimations

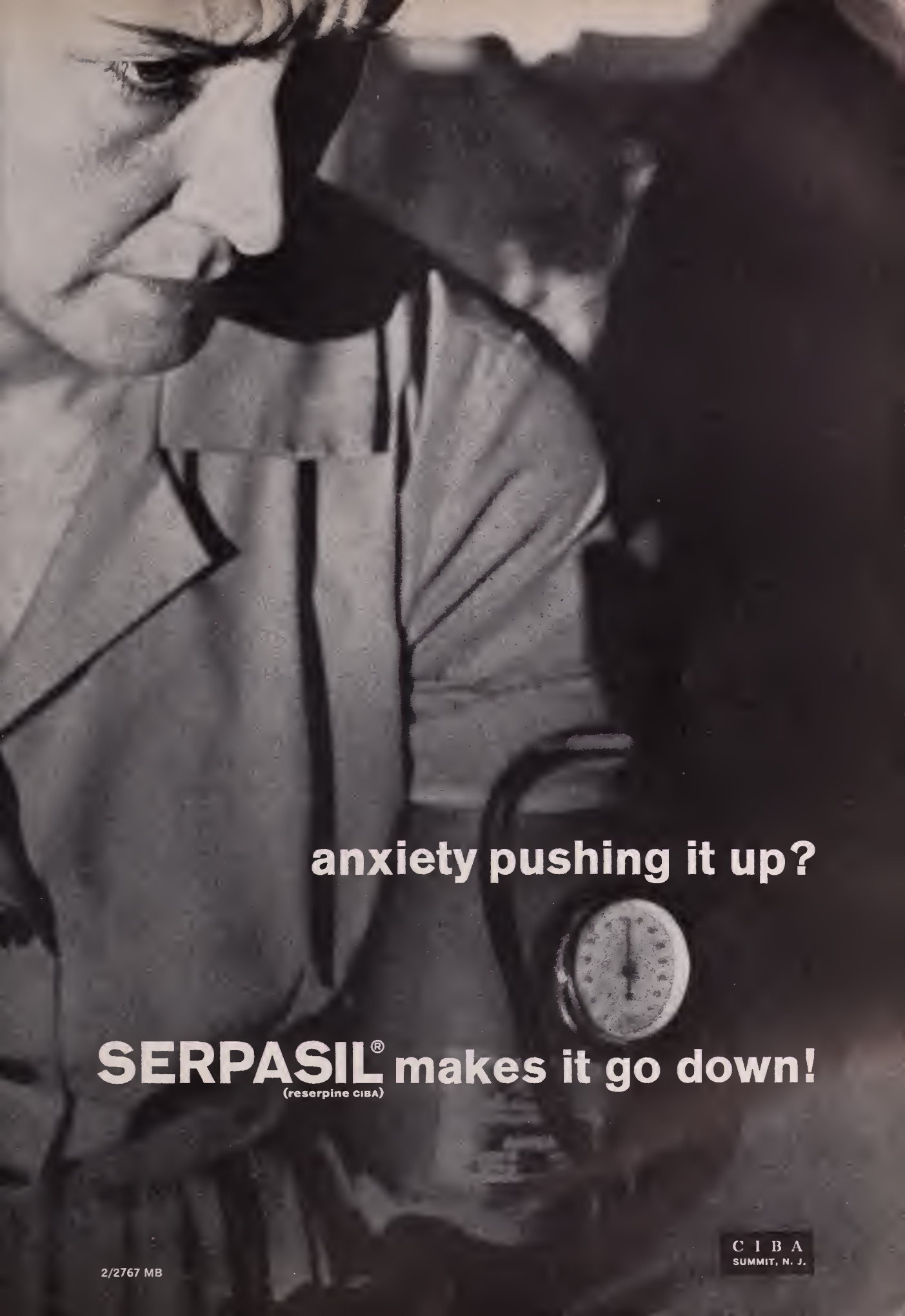
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COLOR-CALIBRATED CLINITEST®

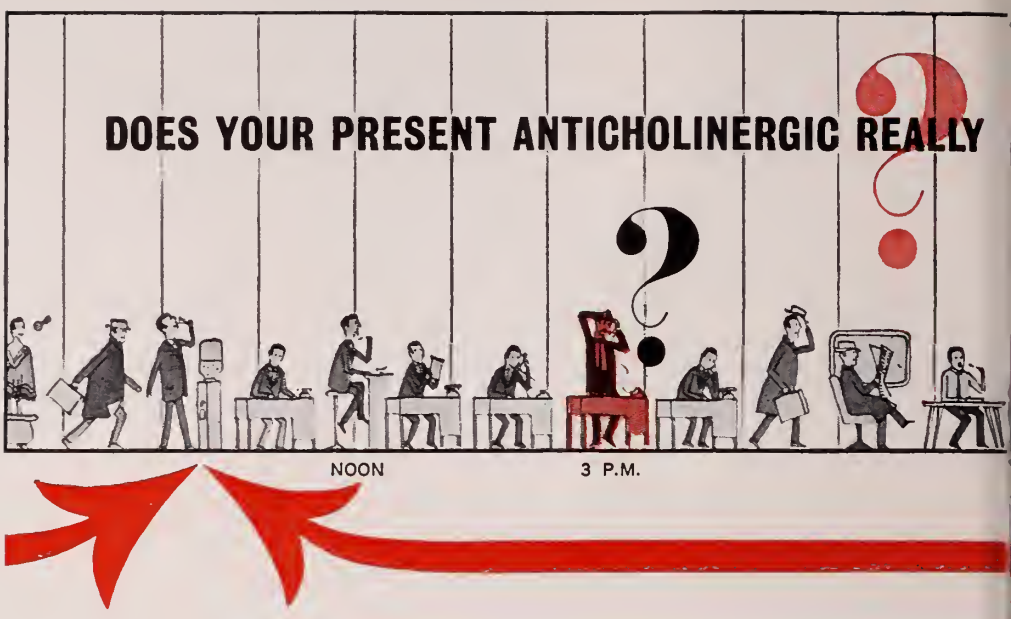
BRAND Reagent Tablets

84060

- full-color calibration, clear-cut color changes
- established "plus" system covers entire critical range
- standard blue-to-orange spectrum
- standardized, laboratory-controlled color scale
- "urine-sugar profile" graph for closer control


anxiety pushing it up?
SERPASIL® makes it go down!
(reserpine CIBA)
CIBA
SUMMIT, N. J.
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DOES YOUR PRESENT ANTICHOLINERGIC REALLY



The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, **even while he sleeps.** The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.[1]

COMPARE THE DATA ON ENARAX... the new combination of an **inherently** long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

OBSERVE THE OXYPHENCYCLIMINE REPORTS...

McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."[1]

Kemp: "...for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action...may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."[3]

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

LOOK AT THE RESULTS WITH ENARAX[4,5]:

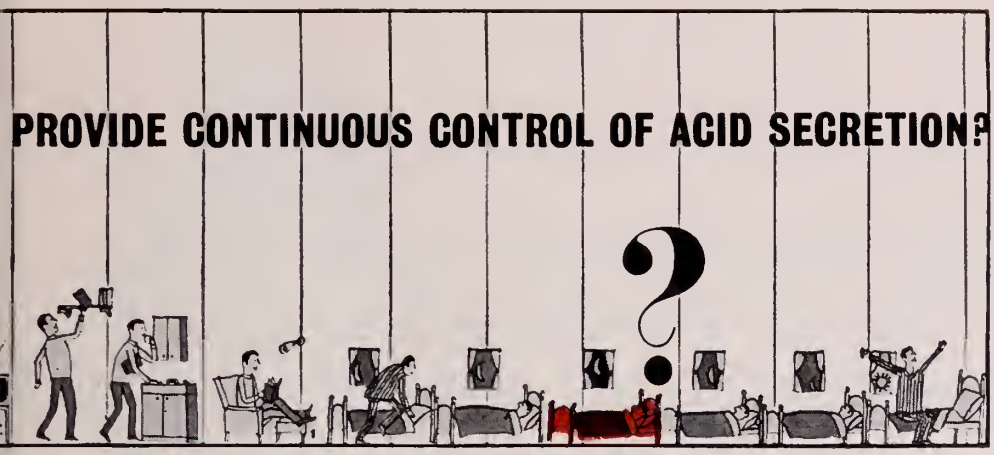
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does.**

ENARAX®

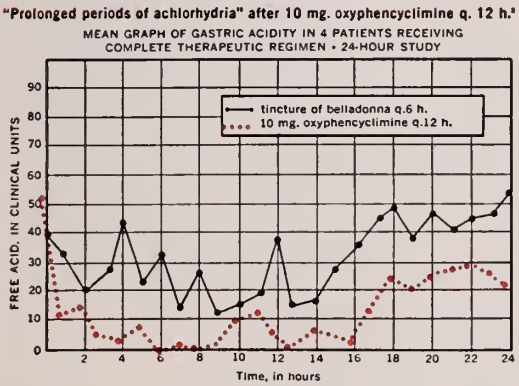


(oxyphencyclimine plus ATARAX®)

A SENTRY FOR THE G.I. TRACT



"Prolonged periods of achlorhydria" after 10 mg. oxyphencyclimine q. 12 h.[3]



Clinical Diagnosis: Peptic Ulcer—Gastritis—Gastroenteritis—Colitis—Functional Bowel Syndrome—Duodenitis—Hiatus Hernia (symptomatic)—Irritable Bowel Syndrome—Pylorospasm—Cardiospasm—Biliary Tract Dysfunctions—and Dysmenorrhea.

Clinical Results: Effective in over 92% of cases.

As for Safety: "Side reactions were uncommon, usually no more than dryness of the mouth...."[4]

Each ENARAX tablet contains:

Oxyphencyclimine HCl ..... 10 mg.
Hydroxyzine (ATARAX®) ..... 25 mg.

Dosage: One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

ROERIG Rx

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being™

Q.

When you want to prescribe a regimen to reduce serum cholesterol and beta lipoproteins, are drastic diet changes necessary?

a.

Fortunately, no. Often only two steps are necessary: (1) control of the amount of calories and of dietary fat, and

(2) a simple modification of food preparation method in which poly-unsaturated vegetable oil is used in place of saturated fats.

Obviously, in any special diet, the fewer required changes in the patient's eating habits, the more likelihood there is that the patient will adhere to the prescribed diet.

Once total fat and calorie intake is adjusted, the simple replacement of *saturated* fats, used at the table and in cooking, with *poly*-unsaturated Wesson makes possible a most subtle dietary change, yet conforms completely to therapeutic requirements.

Where a vegetable (salad) oil is medically recommended as part of a cholesterol depressant regimen, Wesson is unsurpassed by any readily available brand.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50%. Only the lightest cottonseed oils of highest iodine number are selected for Wesson and no significant variations in standards are permitted in the 22 exacting specifications required before bottling.



This flaky pie crust, *crisp cookies, Chiffon cakes, biscuits can all be made easily with Wesson. Decrease the calories of pie by preparing with single crust and a fresh fruit or gelatin filling. It is delicious.*

FREE *Wesson recipes are available in quantity for your patients, showing them how to prepare these treats as well as main dishes, vegetables and salads with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N., 210 Baronne St., New Orleans 12, La.*



Wesson satisfies the most exacting appetites. To be effective, a diet must be *eaten* by the patient. The majority of housewives prefer Wesson particularly by the criteria of odor, flavor (blandness) and lightness .of color. (Substantiated by sales leadership for 59 years and reconfirmed by recent tests against the next leading brand with brand identification removed, among a national probability sample.)

Wesson's Important Constituents

Wesson is 100% cottonseed oil . . . winterized and of selected quality

Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	19-28%
Total unsaturated	75-80%
Palmitic and stearic glycerides (saturated)	20-25%
Phytosterol (predominantly beta sitosterol)	0.4-0.7%
Total tocopherols	0.09-0.12%

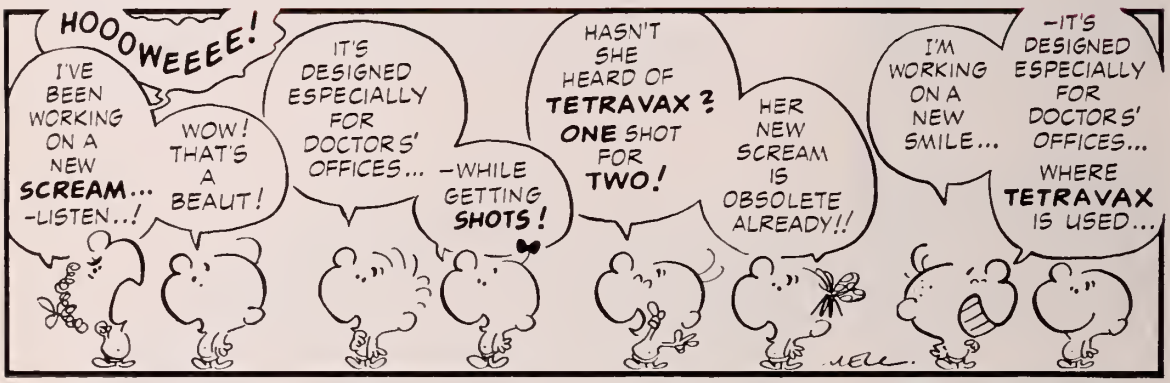
Never hydrogenated—completely salt free

Each pint of Wesson contains 437-524 Int. Units of Vitamin E.

FOR SIMULTANEOUS IMMUNIZATION AGAINST 4 DISEASES:

Poliomyelitis-Diphtheria-Pertussis-Tetanus

PEDI-ANTICS



TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more *diseases...with* fewer *injections*

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.



For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

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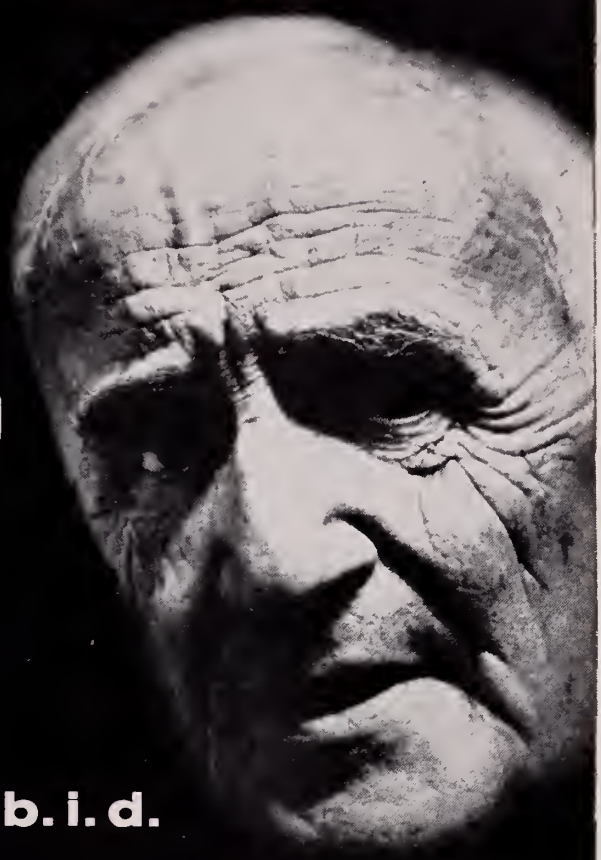
IN SENILE CONFUSION . . .

CONTINUOUS CEREBRAL OXYGENATION

WITH

ONE

Geroniazol TT* b.i.d.



- Each Geroniazol TT tablet contains:
  Pentylenetetrazol . . . . . 300 mg.
  Nicotinic Acid . . . . . 150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio

Squibb Announces Chemipen

Squibb Alpha-Phenoxyethyl Penicillin Potassium

new chemically improved penicillin which provides the highest blood levels that are obtainable with oral penicillin therapy



As a pioneer and leader in penicillin therapy for more than a decade, Squibb is pleased to make Chemipen, a new chemically improved oral penicillin, available for clinical use.

With Chemipen it becomes possible as well as convenient for the physician to achieve and maintain higher blood levels—with greater speed—than those produced with comparable therapeutic doses of potassium penicillin V. In fact, Chemipen is shown to have a 2:1 superiority in producing peak blood levels over potassium penicillin V.*

Extreme solubility may contribute to the higher blood levels that are so notable with Chemipen.* Equally notable is the remarkable resistance to acid decomposition (Chemipen is stable at 37°C. at pH 2 to pH 3), which in turn makes possible the convenience of oral treatment.

And the economy for your patients will be of particular interest—Chemipen costs no more than comparable penicillin V preparations.

Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

"CHEMIPEN" IS A SQUIBB TRADEMARK.

SQUIBB

Squibb Quality—the Priceless Ingredient

In vitro facts and in vivo findings on new broad-spectrum

DECLOMYCIN



A MAJOR CONTRIBUTION TO ANTI-INFECTIVE THERAPY

PROPERTIES

PERFORMANCE

IMPORTANCE

PROPERTIES:

Greater inhibitory action ... lower daily intake than other tetracyclines

A unique new fermentation product of *Streptomyces aureofaciens,* DECLOMYCIN Demethylchlortetracycline achieves notably greater antibiotic activity against infections[2,4,7,8,10,14,19,20,24] because of two basic factors: (1) inherent potency, and (2) greater stability in most body fluids.[15,17,18,27] Actual clinical activity has, in many instances, been better than expected on the basis of *in vitro* sensitivity tests.[14,18,19]

Broad-spectrum control ... with far less antibiotic

Activity levels of DECLOMYCIN Demethylchlortetracycline are higher than those of previous broad-spectrum antibiotics. Hardier strains of various organisms appear to be somewhat more responsive.[4] Apparently some strains of Pseudomonas, Proteus and *A. aerogenes,* frequently refractory to therapy, are sensitive to DECLOMYCIN.[7,23,25,26]

DECLO

Sustained peak activity ...greater security of control

Prolonged retention and compatibility of DECLOMYCIN with body fluids provides peak activity between doses.[15,17,18,27] Inhibition of bacteria is more constant.

24-48 hours extra activity...protection against relapse

DECLOMYCIN maintains effective antimicrobial action for one to two days after stopping dosage.[7,14] Resurgence of a few viable pathogens, with relapse...and low patient defense against secondary bacterial invasion during the first post-therapy days . . . are largely offset.

MYCIN®

Demethylchlortetracycline Lederle



PERFORMANCE

Susceptibility Tests

Roberts, M. S., *et al.*[25]
New York, N. Y.

Pre-treatment sensitivity tests in 75 genitourinary patients showed DECLOMYCIN Demethylchlortetracycline to be superior against the large majority of organisms and in no instance inferior to tetracycline. DECLOMYCIN apparently has more effective coverage... several strains of *Proteus* and *A. aerogenes* responded.

Tolerance & Toxicity

Boger, W. P., and Gavin, J. J.[2]
Norristown, Pa.

Administration of the recommended 600 mg. (4 capsules) daily for 30 days to a small group of elderly patients revealed no hematologic, hepatic and urinary alteration or other abnormal finding. No clinical side effects were observed.

Gonococcal Infection

Marmell, M., and Prigot, A.[20]
New York, N. Y.

All except two of 63 patients with acute gonorrhea responded promptly to therapy with DECLOMYCIN. Fifteen received 250 mg. q.i.d. for one day, the remainder received 600 or 750 mg. in divided doses over one or two days. No side effects.

General Medicine

Lichter, E. A., and Sobel, S.[19]
Chicago, Ill.

One hundred and sixty-nine patients with various infections showed generally equivalent response to four dosage regimens, including the recommended level. Of 29 pneumococcal pneumonias, all recovered with 15 afebrile in 48 hours or less — except a few patients with preterminal underlying disease. All 42 scarlet fever patients recovered with 32 afebrile in 48 hours or less. Other patients also responded satisfactorily with few exceptions. No blood, liver or kidney toxicity found. G.I. side effects occurred in only 2 per cent at the recommended dosage, or less, and were easily reversible.

Respiratory Infection

Perry, D. M., *et al.*[22]
Seattle, Wash.

Good or fair response in 24 of 30 cases of acute bacterial pneumonia, and in all of six cases of acute bronchitis. Side effects occurred at higher dosage but were uniformly absent when dosage was limited to 600 mg. per day.

Various Infections

Finland, M., *et al.*[7]
Boston, Mass.

Eighty patients with various infections were treated with DECLOMYCIN Demethylchlortetracycline and an equal number with tetracycline. Therapeutic response was indistinguishable between the two groups. However, DECLOMYCIN Demethylchlortetracycline dosage was much lower (50 to 60 per cent of that of tetracycline.) In addition, incidence of side effects with demethylchlortetracycline was only half that experienced with tetracycline.

Pyelonephritis

Vineyard, J. P., *et al.*[29]
Dallas, Tex.

Therapy with DECLOMYCIN was successful in 12 of 13 patients with pyelonephritis. Sterile cultures were obtained in nine patients within six to 14 days. Among the organisms suppressed were strains of *A. aerogenes, E. coli* and paracolon bacillus. In most cases, DECLOMYCIN was used jointly with another antibiotic.

Soft Tissue Infection

Prigot, A., *et al.*[24]
New York, N. Y.

DECLOMYCIN was used alone or auxiliary to surgical measures in 150 cases of acute soft tissue infection, mostly ambulatory. Full resolution of infection was achieved in all cases, average length of treatment being six days. Dosage was 600 or 750 mg. daily. Side effects consisted of transitory G.I. disturbances in three cases.

DECLO

Urinary Infection

Trafton, H. M., and Lind, H. E.[28]
Brookline, Mass.

Clinical response was favorable in a majority of 50 cases of urinary tract infections with relief of symptoms, elimination, or marked reduction, of pyuria and with urine sterilization in some. DECLOMYCIN Demethylchlortetracycline was administered in one-half to one-third the daily milligram level of related antibiotics, for 8 days.

No significant diarrhea occurred in any case although mild nausea and upper G.I. symptoms were fairly common. Phototoxicity occurred in six cases.

Antibiotic-Resistant Infections

Compilation of reports of 210 clinical investigators.[23]

In 570 treated for a great variety of infections, DECLOMYCIN was successful in resolving infection or in effecting marked improvement in 81 per cent, after failure of other antibiotics.

Pediatric Infection

Fujii, R., *et al.*[9]
Tokyo, Japan

Therapeutic results, elicited in 309 pediatric patients with average daily dosage of 15 mg./kg., were equal to those produced by 30 mg./kg. of buffered tetracycline preparations. Satisfactory results were obtained in 75 per cent. No appreciable side effects when 15 mg./kg./day dosage was not exceeded.

Pediatric Infection

Hall, T. N.[12]
San Francisco, Cal.

All eight cases of ophthalmic, respiratory or otic infection responded to four to twelve days of DECLOMYCIN therapy (5 recovered, 2 greatly improved, 1 improved). One skin reaction, in a case receiving the higher trial dosage of 7 mg./lb. daily, occurred.

Pneumonias

Duke, C. J., *et al.*[5]
Washington, D. C.

Results were satisfactory in all 32 cases of acute bacterial penumonia, excepting for two caused by non-susceptible organisms. Over half had been complicated by pleural, suppurative, bronchial, or underlying structural lung problems. Dosage was low. No toxicity found. Acceptance and toleration were excellent.

Intestinal & Respiratory Infection

Hartman, S. A.[13]
Sherman Oaks, Cal.

Six cases of g.i. infection (diverticulitis, ileitis, colitis) responded in three to eight days on the lower milligram intake...even after failure in most with sulfa, neomycin or penicillin-streptomycin. Complete recovery was gained in 5 respiratory cases on a shorter schedule; another withdrew with occurrence of thrush. No other side effects were reported.

Respiratory Infection

Feingold, B. F.[6]
San Francisco, Cal.

All 13 upper or lower respiratory infections demonstrated very good response in 2-3 days on recommended dosage. No side effects were reported.

Various Infections

Compilation of reports of 210 clinical investigators.[23]

Of 1,904 patients with adequate follow-up treated for a wide diversity of infections, 87 per cent were reported as cured or improved. Most patients received one 150 mg. tablet every 6 hours. Therapy usually was for three to eight days. Side effects, mostly referable to the gastrointestinal tract, occurred in 200 patients.

PERFORMANCE

MYCIN®

Demethylchlortetracycline Lederle



PERFORMANCE *(continued)*

Respiratory Infection & Others

Gates, G. E.[11]
South Bend, Ind.

Of 65 cases, predominantly respiratory infections, but including some of cystitis and cellulitis, 50 had a good response, 12 were fair and three were failures. One of the failures was a case of chronic ulcerative colitis and two were respiratory infections. The only complication was a slight vulvular pruritus and burning tongue occurring near the end of a week's treatment of residual pneumonitis.

Pustular Dermatoses

Kanof, N. B., and Blau, S.[16]
New York, N. Y.

Eighty-five per cent of 67 patients responded with excellent or good results on a DECLOMYCIN schedule of one 150 mg. capsule q.i.d. for two to twelve weeks. Three poor responses were related to highly resistant organisms. No pruritus or drug eruptions developed. Only four cases showed nausea or diarrhea in the long therapeutic course.

Surgical Infection

Floyd, R. D., and Anlyan, W. G.[5]
Durham, N. C.

Successful results were generally obtained in 60 patients given 600 mg. DECLOMYCIN daily (or slightly less) for five to 15 days. No infection developed in the clean or contaminated prophylaxis group. Most frank infections responded...including several refractory to previous antibiotics. No toxicity evidenced. Intestinal toleration was excellent.

Wound Infections & Others

Meyer, B. S.[21]
Birmingham, Ala.

Thirty-five cases, chiefly prophylactic, and some traumatic-surgical wound infections were treated usually on one capsule DECLOMYCIN q. 6 h. for two to eight days. Over 80 per cent responded, including one with Pseudomonas etiology. Minor itching or nausea occurred in two; prominent nausea developed in one on a q. 4 h. schedule.

Topical & Wound Infections

Stewart, J.[26]
New Orleans, La.

Of 21 patients followed, 15 completely recovered, four improved in four to 42 days on 600 mg. daily. Seven had not responded to various other therapies. One had *A. aerogenes* predominance, complicated by Proteus and *E. coli*. Cases were traumatic-surgical-topical infections with some respiratory. One questionable reaction of anemia was encountered.

Oral Infection

Arbour, E. F.[1]
New Orleans, La.

Of four patients treated, three responded to one capsule DECLOMYCIN q. 6 h. for three days. No change in one case of chronic proliferating periodontitis. No adverse reactions seen.

Brucellosis

Chávez, Max, G.[3]
Mexico, D. F.

All nine patients infected with *Brucella melitensis* were afebrile on fourth or fifth day of DECLOMYCIN therapy and asymptomatic within 15 days. Treatment lasted for 45 days. No relapses occurred. Hepatic, renal, or hematologic toxicity was not seen. Minor or occasional intestinal reactions in some cases did not require discontinuance.

DECLO

IMPORTANCE...

in the average patient – DECLOMYCIN reduces the possibility of gastrointestinal intolerance and increases the likelihood of an uneventful therapeutic course. Variants of an infecting organism are less likely to survive the high, sustained activity and post-dosage control. Minor or major reverses or "setbacks" during therapy may be avoided. Susceptibility to secondary infection when dosage is terminated is counteracted by the "extra-day" activity.

in mixed infections–DECLOMYCIN provides satisfactory control of conditions involving multiple pathogens. Since organisms vary in sensitivity at given antibiotic levels, the higher DECLOMYCIN activity tends to inhibit a greater proportion of the less susceptible strains. Remission and bacteriologic cure can thus progress at a faster pace.

in the absorption-deficient – The high activity/intake ratio of DECLOMYCIN provides a wider margin of security for those with disturbed or abnormal absorption or with underlying gastrointestinal dysfunction. Inhibitory levels remain more than adequate in most.

under adverse host conditions – In debility, malnutrition, neoplasm, diabetes, or other organic, chronic or underlying disease, DECLOMYCIN may be vital to successful resolution of infection. *Generally in geriatrics,* for the same reason, DECLOMYCIN should often be a broad-spectrum of choice.

if an occasional dose is missed – The sustained action of DECLOMYCIN protects against possible loss of control. In the sleeping patient, an occasional dose may be foregone without adverse effect, while benefits of such rest are gained. Arbitrary rejection of a dose by pediatric or geriatric patients... simple forgetfulness... or postponing a dose will not appreciably reduce antibiotic activity provided these do not occur frequently.

MYCIN®

Demethylchlortetracycline Lederle



IMPORTANCE

DECLOMYCIN®

Demethylchlortetracycline Lederle

a masterpiece of antibiotic design

CAPSULES, 150 mg., bottles of 16 and 100. *Dosage:* Average adult 1 capsule four times daily.

PEDIATRIC DROPS, 60 mg./cc. (custard flavor) in 10 cc. bottle with calibrated dropper. *Dosage:* 1-2 drops (3-6 mg.) per pound body weight per day—divided into 4 doses.

ORAL SUSPENSION, 75 mg./5 cc. teaspoonful (custard flavor) in 2 oz. bottle. *Dosage:* 3-6 mg./lb./day—divided in 4 doses.

REFERENCES: 1. Arbour, E. F.: Clinical report, cited with permission.

2. Boger, W. P., and Gavin, J. J.: Demethylchlortetracycline: Serum Concentration Studies and Cerebrospinal Fluid Diffusion. Read at Seventh Antibiotics Symposium, Washington, D. C., November 5, 1959.

3. Chávez, Max G.: Therapeutic Evaluation of Demethylchlortetracycline in Human Brucellosis. *Ibid.*

4. Clapper, W. E., and Proper, R.: Sensitivities of Clinical Isolates to Demethylchlortetracycline and Tetracycline, and Demethylchlortetracycline Serum Levels in Patients. To be published.

5. Duke, C. J.; Katz, S., and Donohoe, R. F.: Demethylchlortetracycline in the Treatment of Pneumonia. Read at Seventh Antibiotics Symposium, Washington, D. C., November 5, 1959.

6. Feingold, B. F.: Clinical report, cited with permission.

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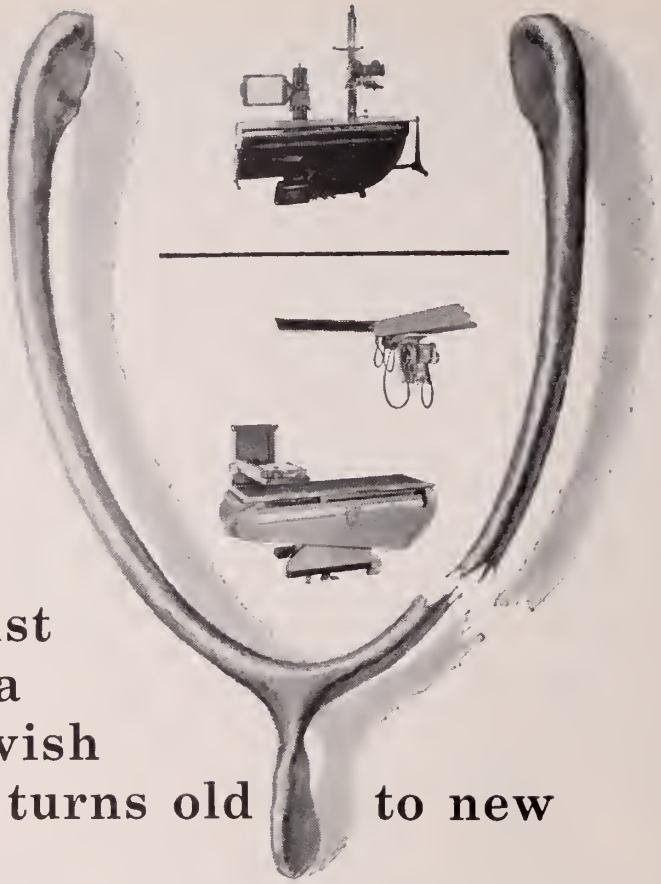
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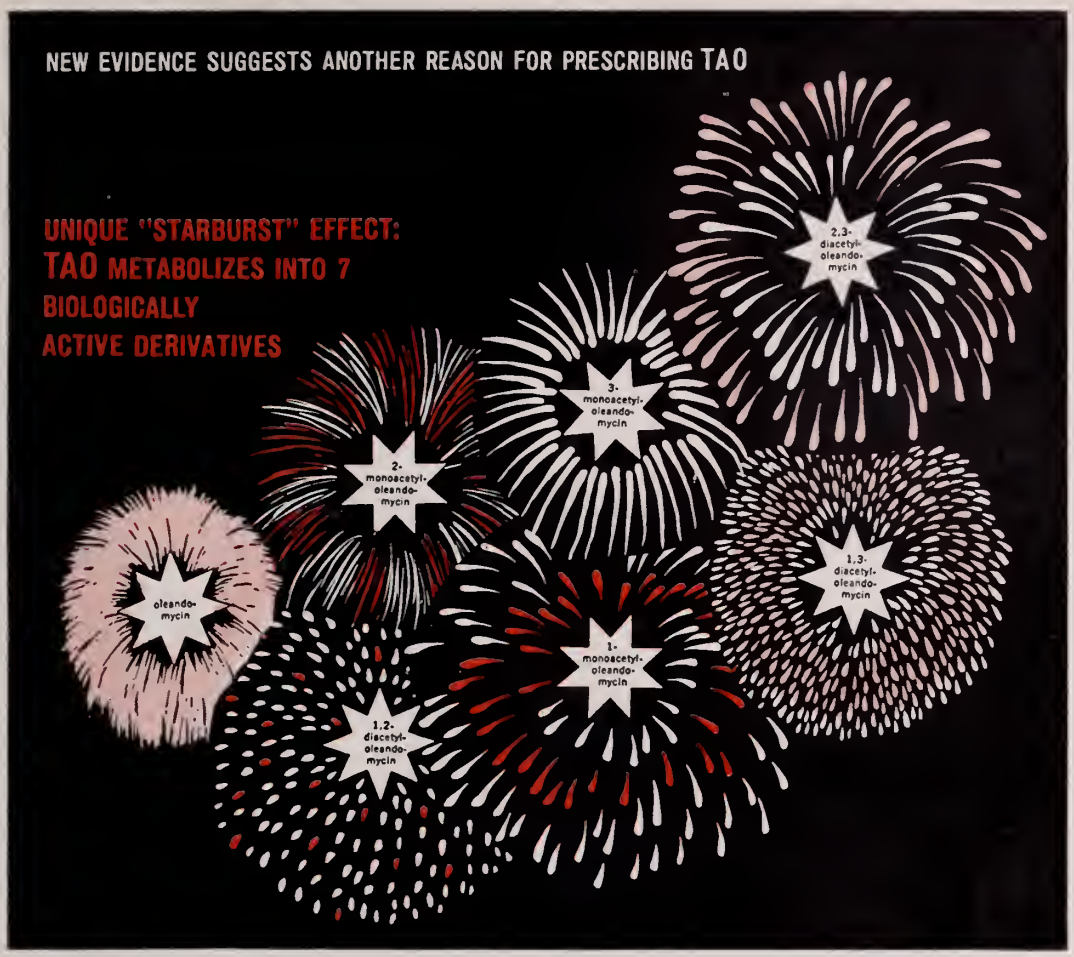
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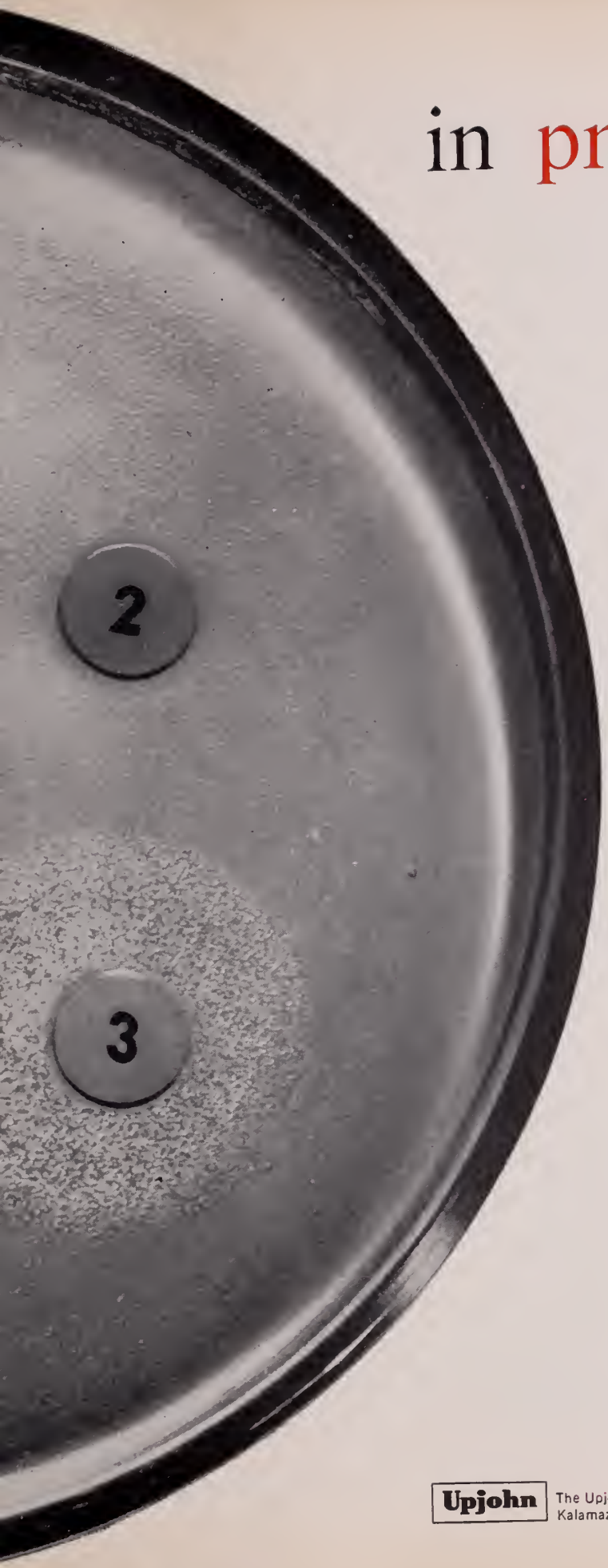


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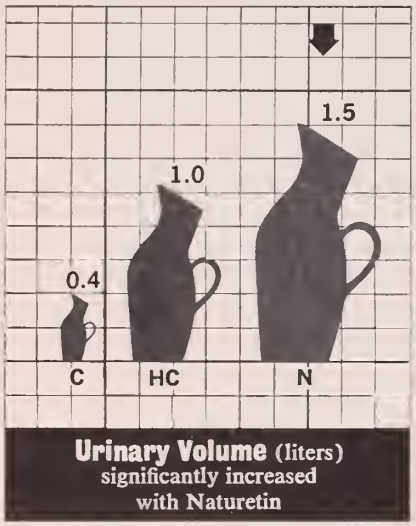
more closely approaches the ideal diuretic

Naturētin

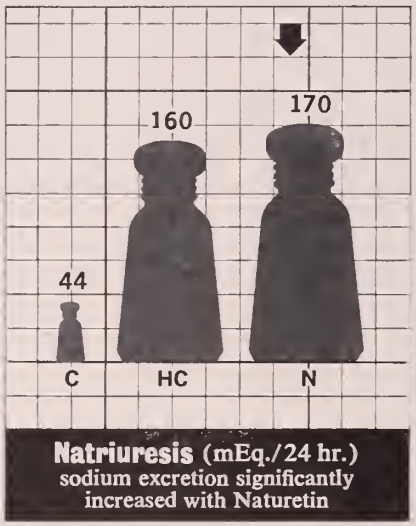
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"When compared to other members of this heterocyclic group of compounds, this drug [NATURETIN] shows a significantly increased natriuresis and decreased loss of potassium and bicarbonate. In this respect it more closely approaches a natural or 'ideal diuretic.' It is effective upon continuous administration and causes no significant serum biochemical changes. It is effective in a wide variety of edematous and hypertensive states and represents a significant advance in diuretic therapy." *Ford, R.V., Pharmacological observations on a more potent benzothiadiazine diuretic; accepted for publication by the American Heart Journal.*

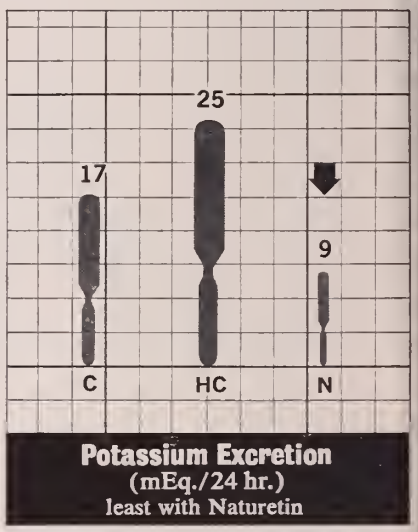
Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin[1]



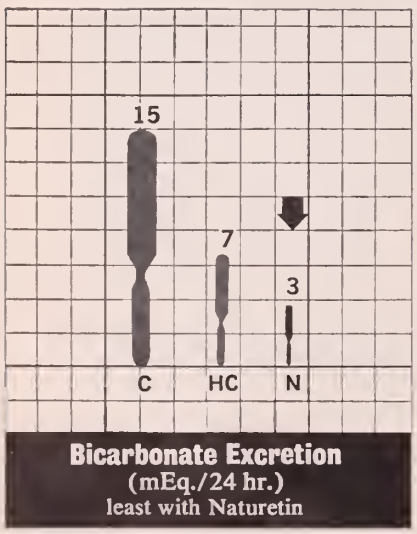
Urinary Volume (liters) significantly increased with Naturetin



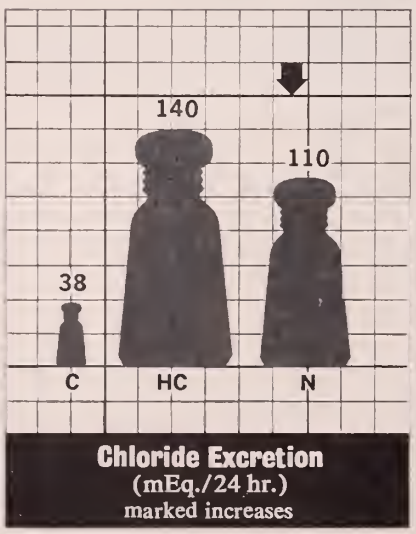
Natriuresis (mEq./24 hr.) sodium excretion significantly increased with Naturetin



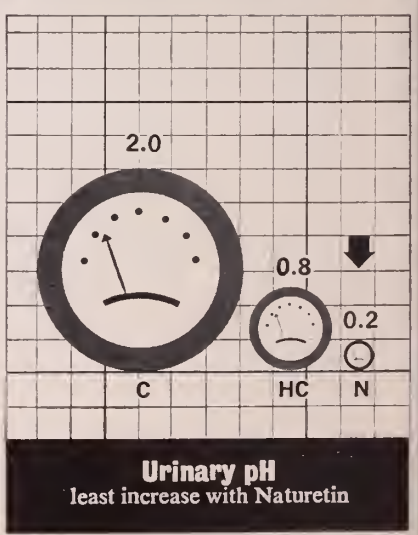
Potassium Excretion (mEq./24 hr.) least with Naturetin



Bicarbonate Excretion (mEq./24 hr.) least with Naturetin



Chloride Excretion (mEq./24 hr.) marked increases



Urinary pH least increase with Naturetin

Typical Doses: Chlorothiazide—1,000 mg.; Hydrochlorothiazide—50 mg.; Naturetin (Benzydroflumethiazide)—5 mg.

1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959.

A single 5 mg. tablet once a day provides all these advantages[2]

- prolonged action — in excess of 18 hours
- convenient once-a-day dosage
- low daily dosage — more economical for the patient
- no significant alteration in normal electrolyte excretion pattern
- repetitively effective as a diuretic and antihypertensive
- greater potency mg. for mg.—more than 100 times as potent as chlorothiazide
- potency maintained with continued administration
- low toxicity — few side effects — low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other antihypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2]Reports (1959) to the Squibb Institute for Medical Research.

Naturētin —*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin —*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

Naturētin —*Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

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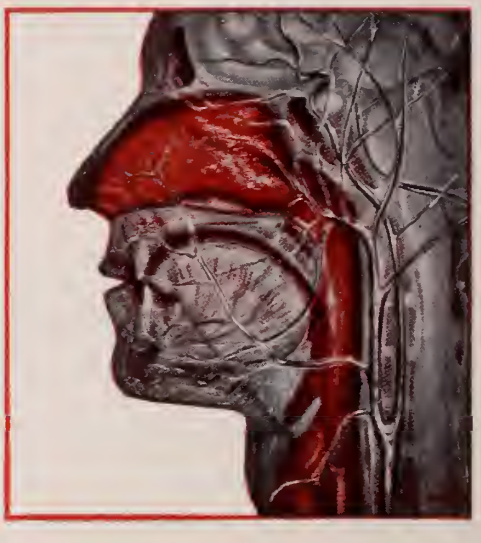


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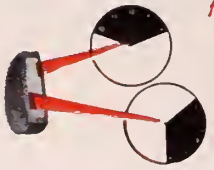
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then — the core disintegrates to give 3 to 4 *more* hours of relief

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Pyrilamine maleate.....25 mg.

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Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides: ¼ the formulation of the Triaminic Tablet.

Dosage (to be administered every 3 or 4 hours): *Adults* — 1 or 2 tsp.; *Children 6 to 12* — 1 tsp.; *Children 1 to 6* — ½ tsp.; *Children under 1* — ¼ tsp.

1. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
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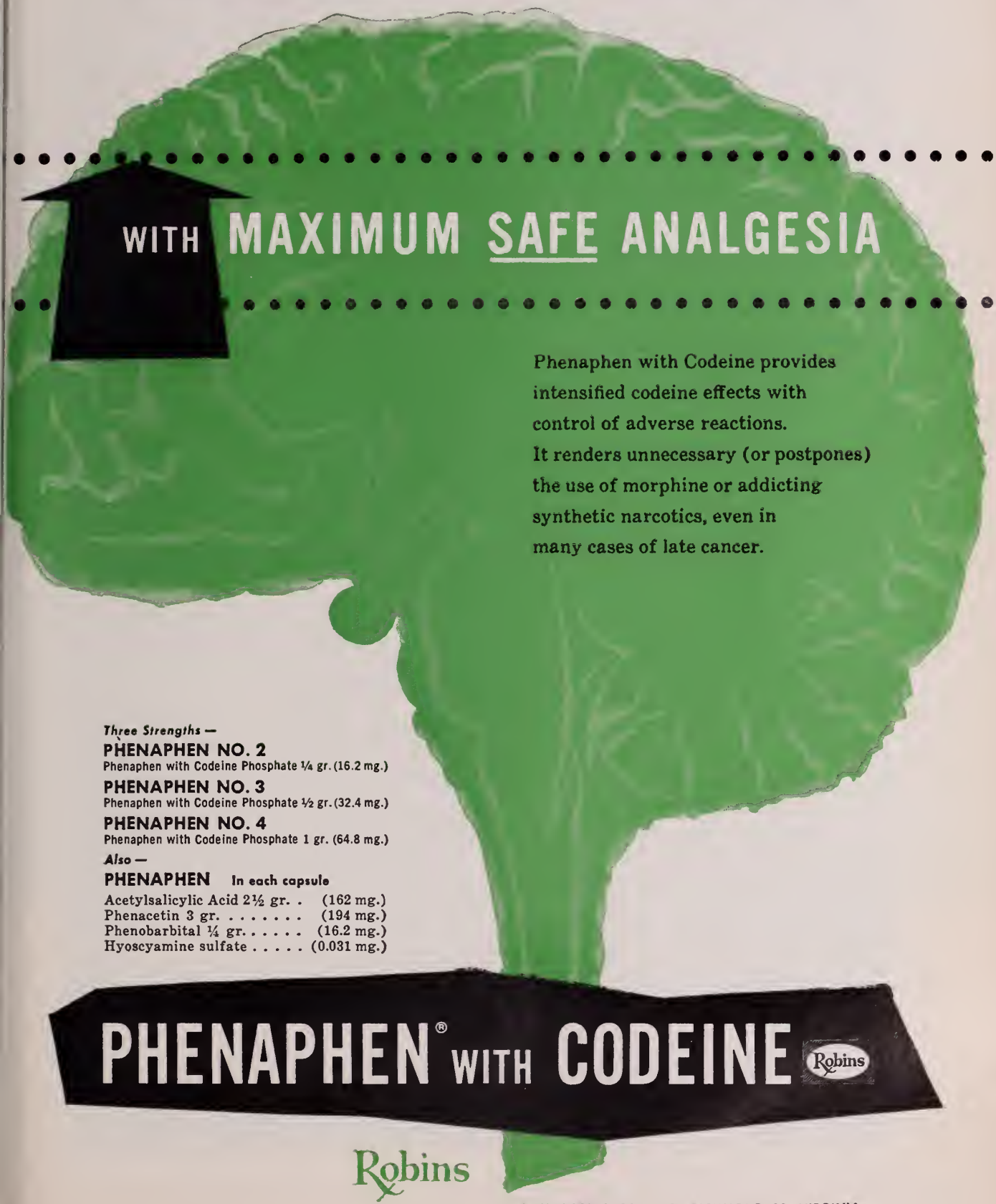
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Adult dosage: Gastric hyperacidity—2 to 4 tablets as necessary. Peptic ulcer or gastritis—2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth.

How Supplied: Bottles of 50, 100, 200 and 1000.

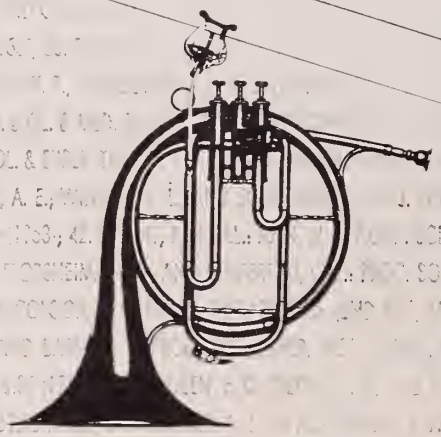
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Rautensin bibliography: 1. WRIGHT, W. T., JR.; POKORY, C., AND FOSTER, T.: AM. PRACT. & DIGEST. TREAT. 7:1992, 1956. 2. SUCKLE, E.: GERIATRICS 11:509, 1956. 3. FINCH, W. J.: J. OKLAHOMA M.A. 50:259, 1957. 4. TERMAN, L. A.: ILLINOIS M. J. 3:67, 1957. 5. GIFFORD, R. W.: J. ARKANSAS M. SOC. 55:31, 1958. 6. FORD, R. V., AND MOYER, J. H.: POSTGRAD. MED. 23:41, 1958.

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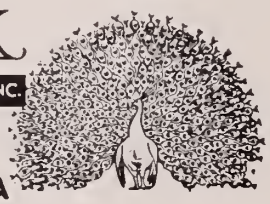
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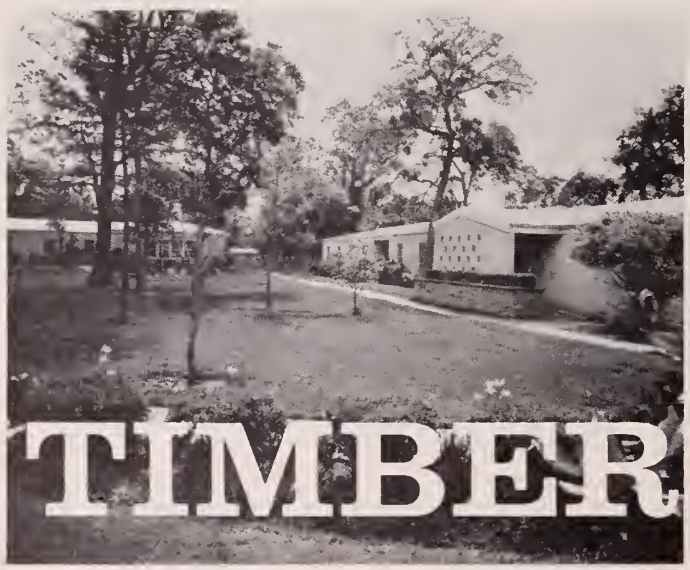
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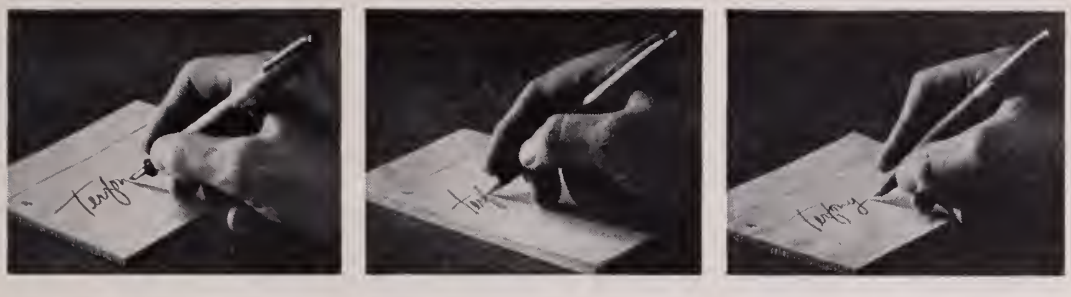
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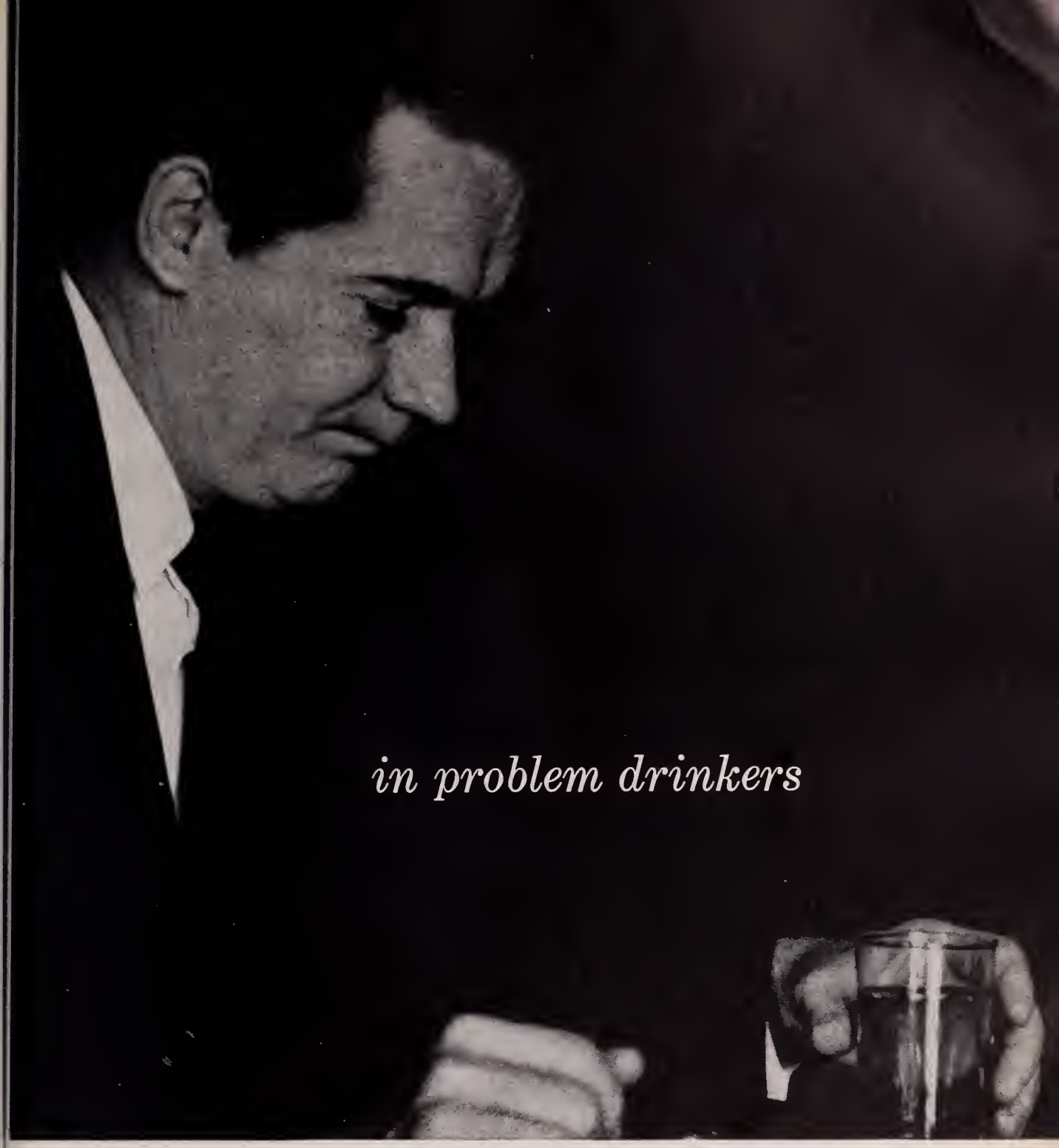
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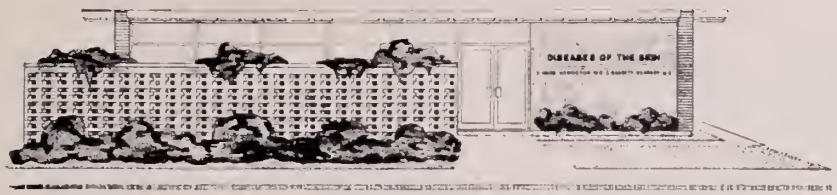
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THE PHYSICIAN AND THE MENTALLY RETARDED CHILD

A mentally retarded child can be the cause of many emotional, social and other problems within a family group, as well as in his school and community. It is hoped that our practicing physicians are aware of these problems, in addition to the various aspects of medical diagnosis and treatment. The child's physician can serve as a valuable team member working together with the State Board of Health and other agencies dealing with mentally retarded children.

In the past, it has been taught that a newborn infant who is potentially a mental defective should be sent to an institution before his parents develop an attachment to the child. However, this approach is not in accord with our present understanding of the problem. The solution is not this simple. The emotional impact on the parents with feelings of guilt, shame, and grief is not alleviated and may even be made worse by the early, forced separation, before they can reach some degree of acceptance of the situation. Also, diagnosis in the earlier period of infancy may be equivocal, leading to tragic errors. Certainly, with the wide variation in degrees of mental retardation, the ultimate intellectual potential or capacity for training and education cannot be predicted for any individual infant at birth.

The State of Louisiana could never hope to provide enough institutional facilities to care for all of these children now in existence. And besides, the mentally retarded children have the same emotional need as normal ones, the need for parental love and attention and to grow up as a member of a family.

The modern trend is to provide for these children through the development of local community resources. Parents need moral support in acceptance of the problem and guidance in management of the child. This help can be provided through co-operative efforts of the physician, the State Board of Health, and other agencies interested in mentally retarded children.

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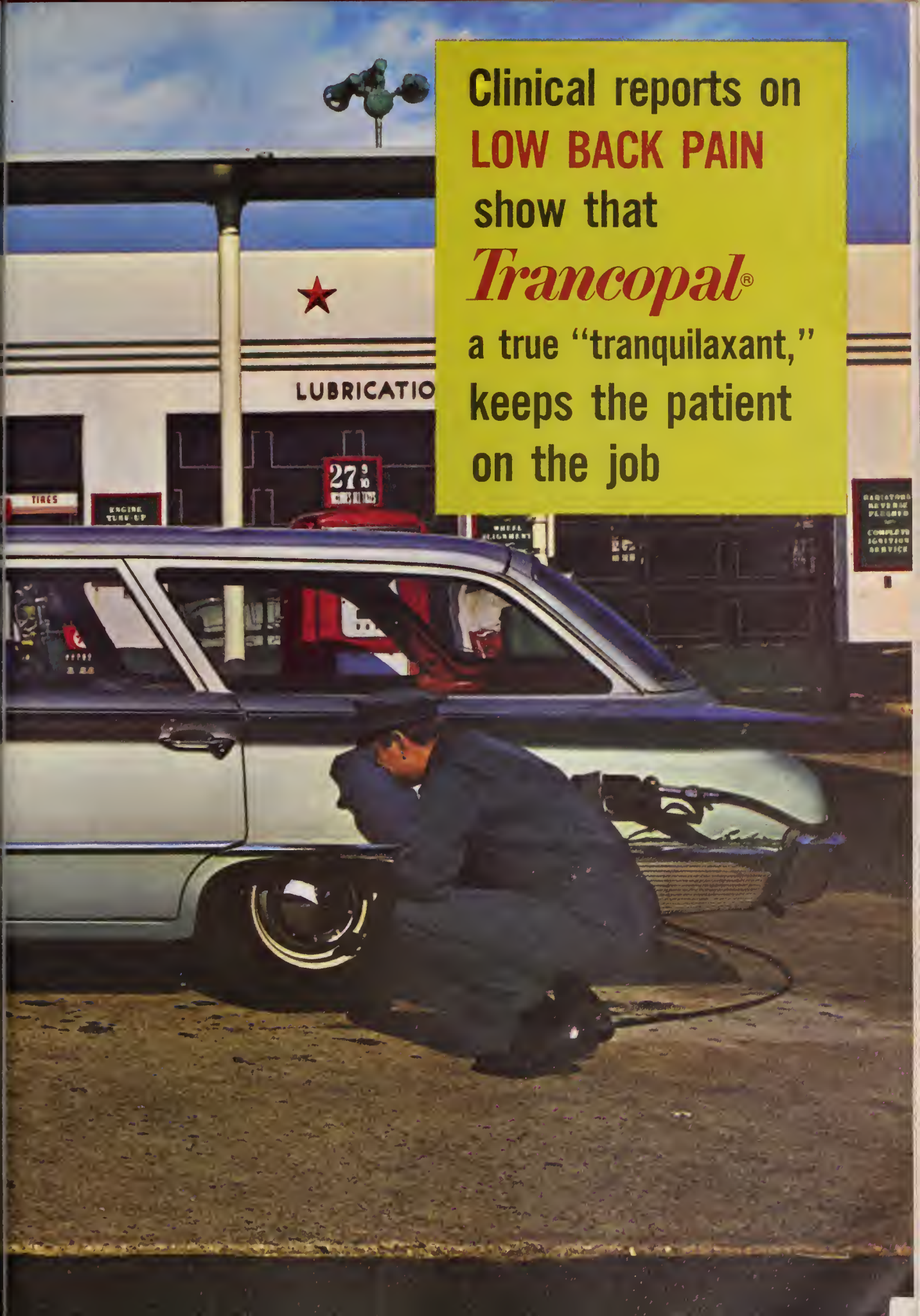
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References: 1. Lichtman, A. L.: Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958. 2. Mullin, W. G., and Epifano, Leonard: Am. Pract. & Digest Treat. 10:1743, Oct., 1959. 3. Gruenberg, Friedrich: Current Therap. Res. 2:1, Jan., 1960. 4. Shanaphy, J. F.: Current Therap. Res. 1:59, Oct., 1959. 5. Ganz, S. E.: J. Indiana M. A. 52:1134, July, 1959. 6. Stough, A. R.: J. Oklahoma M. A. 52:575, Sept., 1959.

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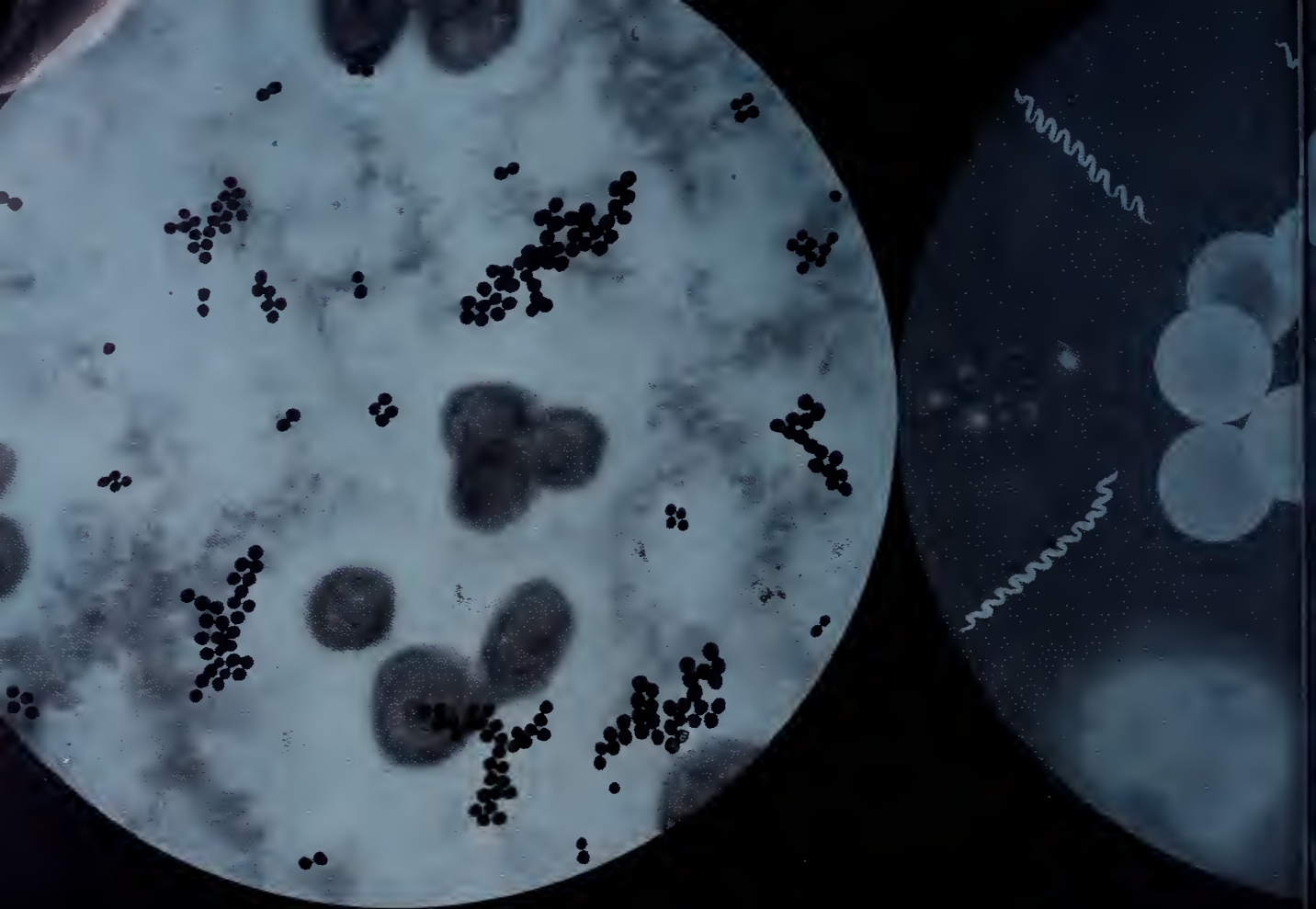
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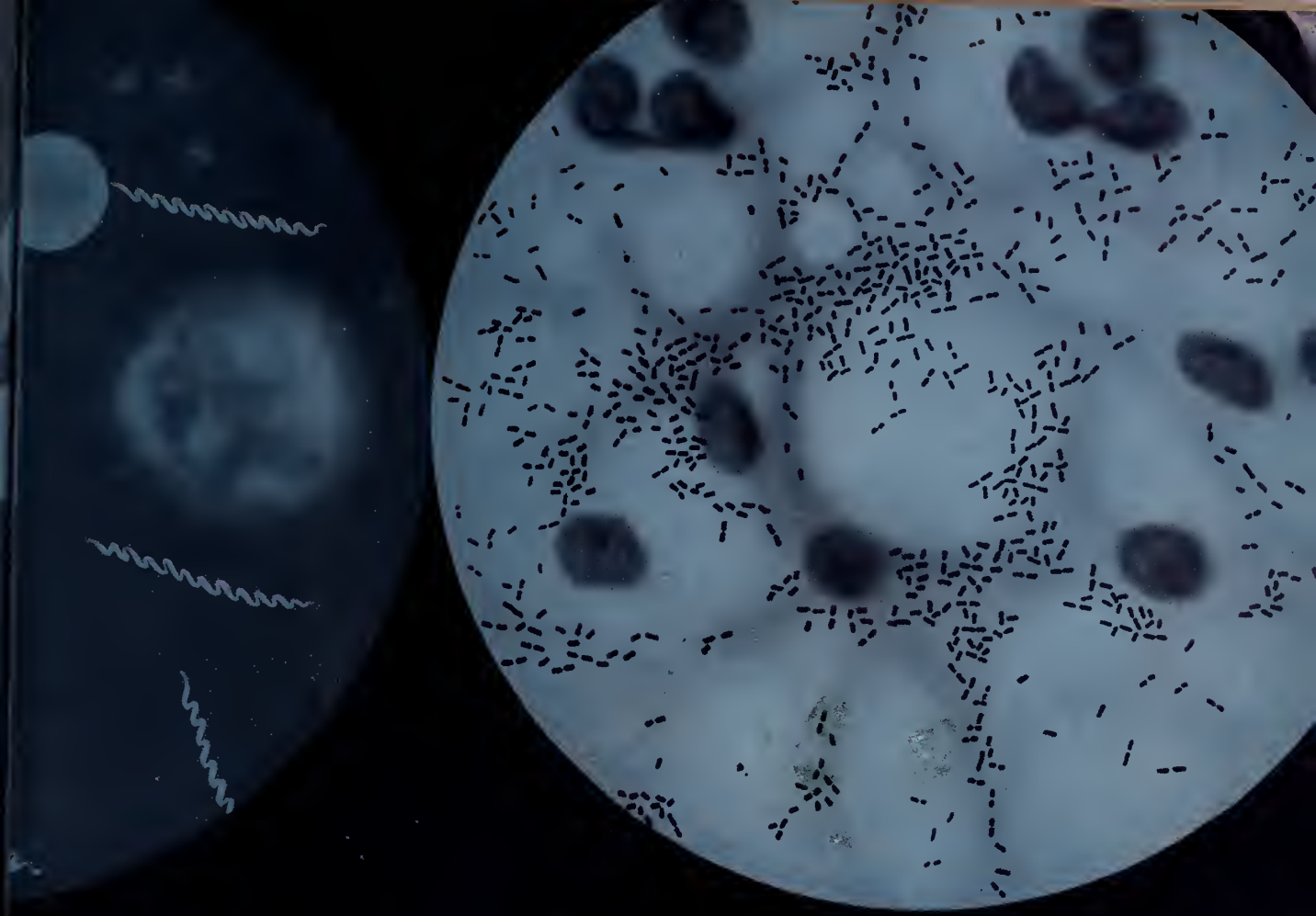
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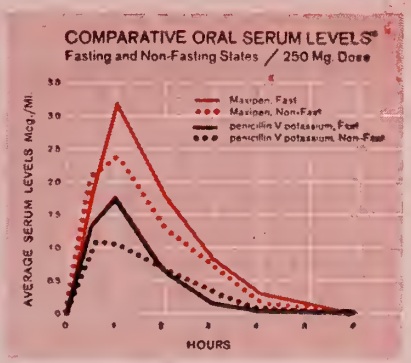
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Preferably, antihiotic therapy, should be based on pretreatment culture of the offending pathogen, but in bacterial pneumonia the problem may well be too pressing to permit the required delay of 24 to 48 hours. A differential diagnosis among bacterial pneumonias, based on such clinical grounds as speed of onset, sepsis and pain may guide the choice of antibiotic for initiation of therapy.

Should clinical judgment dictate that antibiotic therapy be started immediately, at the same time a sputum sample or a subglottic swab can be sent to the laboratory for culture and sensitivity studies. If the response to the first antimicrobial agent proves unsatisfactory, a reasonable basis for changing therapy will then be at hand.

Choosing the Antibiotic

Since therapy must be started at once for bacterial pneumonia, it is advisable to choose a broad-spectrum antibiotic that quickly produces high levels of active agent (e.g., tetracycline phosphate complex, TETREX). Such an antibiotic probably has the best chance of controlling the pathogen, whether it be gram-negative or gram-positive. And if the laboratory report shows that the invading organism is much less sensitive to tetracycline than to other agents, the patient can then be changed to an appropriate antibiotic. If the difference in sensitivity is slight, then the possibility of side effects, sensitization, and toxicity should be evaluated before changing therapy to another antibiotic.

The greatest number of bacterial pneumonias are caused by pneumococci, which respond very well to penicillin, tetracycline, and chloramphenicol. Also, these antibiotics are usually effective against the other gram-positive coccal pneumonias. But penicillin is ineffective against the viral pneumonias and the gram-negative *Hemophilus influenzae* and *Klebsiella pneumoniae*. Although *K. pneumoniae* causes only about 1 to 2 per cent of pneumonia cases on the average,[1] these are apt to be acute and fulminating (Friedländer's pneumonia), with a high mortality rate if not effectively treated. Since pneumococcal pneumonia may be difficult to distinguish clinically from Friedländer's, except by gram-stained sputum smear, it may be wiser to start treatment with an agent also effective against Klebsiella.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reaction. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

Tetracycline is also clinically effective in primary atypical pneumonia.[3]

The tetracyclines (e.g., TETREX) have the advantage of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

No one would deny that appropriate antibiotic therapy has greatly reduced morbidity and saved many lives of patients with bacterial pneumonia. Nevertheless, general supportive measures in the care of patients remain important even today. Especially in the desperately ill patient, antibiotics are not considered as substitutes for the individual evaluation, clinical observation and judgment of the physician.

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a Some strains are not susceptible.

b Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics. 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

References: 1. Wood, W. E., Jr.: In: A Texthook of Medicine. Edited hy Cecil, R. L., and Loeh, R. F., 9th edition, Philadelphia, W. B. Saunders Co., 1955, p. 145. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antihiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (Dec.) 1957. 3. Keefer, C. S.: The choice of an anti-infective agent. In: Drugs of Choice, 1958-1959. Edited hy Walter Modell, St. Louis, The C. V. Mosby Co., 1958, p. 135.

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1. Kestler, O.: In The Pharmacology and Clinical Usefulness of Carisoprodol, Wayne State University Press, Detroit, 1959. 2. Berger, F. M.; Kletzkin, M.; Ludwig, B. J.; Margolin, S., and Powell, L. S.: J. Pharm. Exp. Ther. *127*:66 (Sept.) 1959. 3. Spears, C. E. and Phelps, W. M.: Arch. Pediat. *76*:287 (July) 1959. 4. Phelps, W. M.: Arch. Pediat. *76*:243 (June) 1959. 5. Friedman, A. P.; Frankel, K., and Fransway, R. L.: Papers presented at Scientific Meeting, New York State Society of Industrial Medicine, Inc., New York, Sept. 30, 1959. 6. Kuge, T.: Unpublished reports. 7. Ostrowski, J. P.: Orthopedics *2*:7 (Jan.) 1960.

Literature and samples on request

Also available on request: The Pharmacology and Clinical Usefulness of Carisoprodol, Wayne State University Press, Detroit, 1959. (185 pages)

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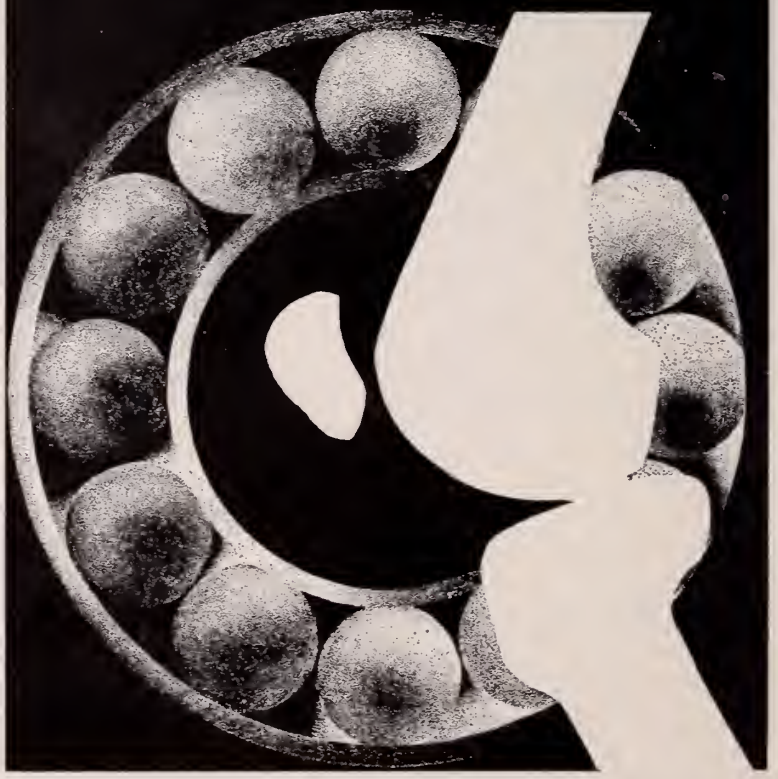
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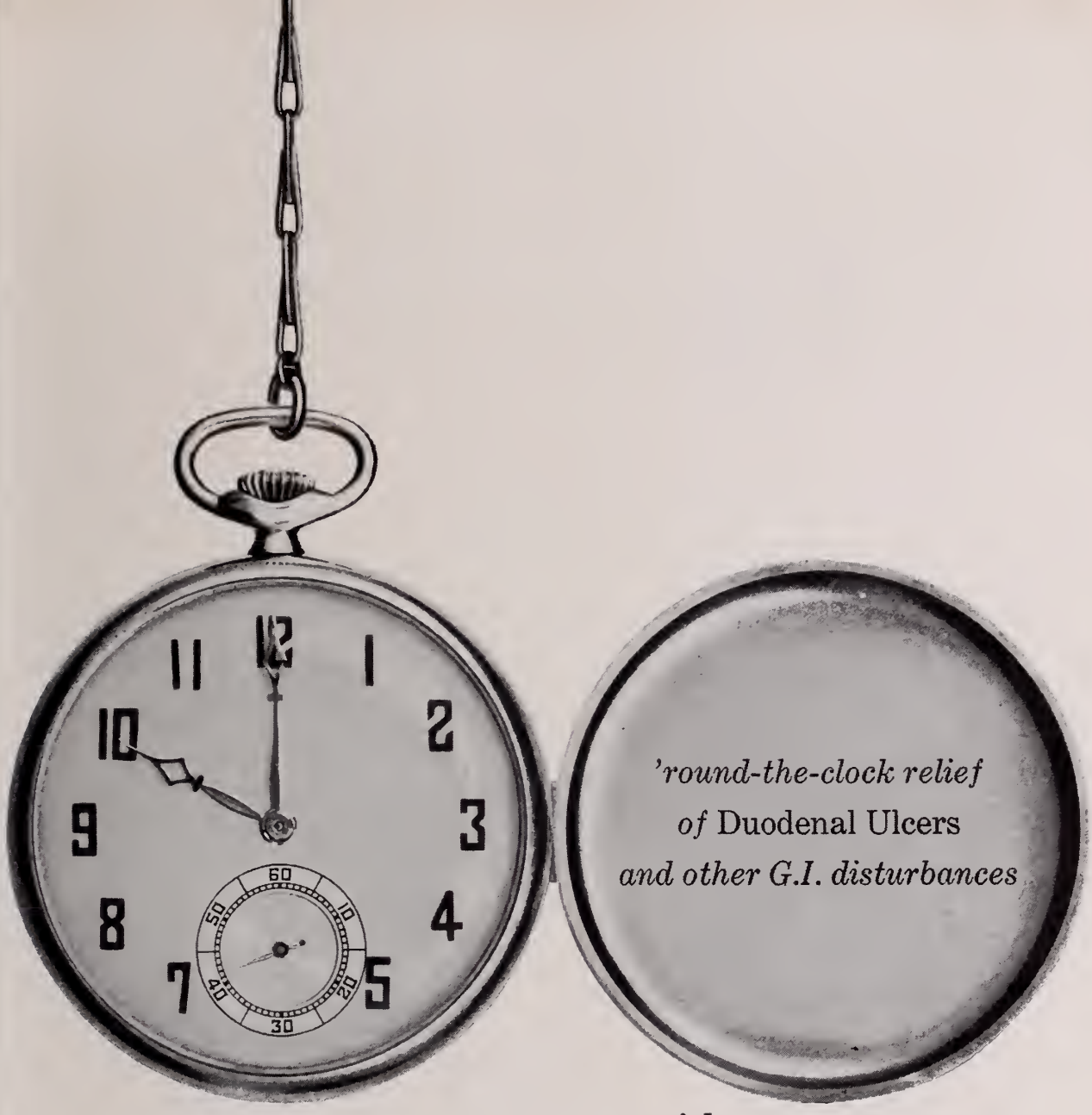
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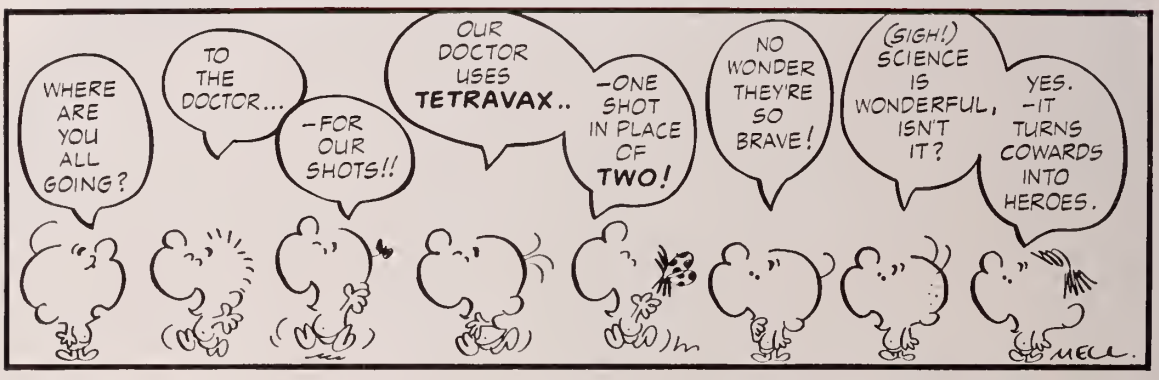
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—New England J. Med. *261*:478, 1959 (Schiller, I. W. and Lowell, F. C.)

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*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

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1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

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APRIL, 1960

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

Roentgen Manifestations of Collagen Diseases*

• The author lists the collagen diseases and their various physiological manifestations, together with the roentgen signs that aid in diagnosis.

CHARLES M. NICE, JR., M. D.†
New Orleans

IT is a signal honor and a pleasure to deliver the sixth annual Menville Lecture. For many years Dr. Menville was recognized as a leader in radiology not only in the South but also throughout the United States. His memory serves as a challenge for us to emulate his example in striving to improve the teaching and practice of radiology. In this way we not only improve the contribution of radiology to the field of medicine but also we find further opportunity to serve our fellow man.

Introduction

Klemperer [21] coined the name of "collagen disease" as a generic term for a group of diseases of obscure origin characterized by a systemic alteration of the extracellular components of connective tissue. The common histologic attribute is the accumulation of fibrinoid,[22] a homogeneous, eosinophilic refractile material which has some of the tinctorial properties of fibrin.

Polyarteritis nodosa, disseminated lupus erythematosus, scleroderma, dermatomyositis, rheumatic fever, and rheumatoid arthritis [11, 14] are usually considered collagen diseases. It may be argued that the usual case of rheumatoid arthritis is not a generalized disease but affects primarily the joints. Also the clinical and roentgenologic signs of rheumatoid arthritis are seen as a part of the total picture of the generalized diseases.

Many other conditions [13, 35, 39] have been included in this group by various writers. Schoenlein's purpura, thrombotic thrombocytopenic purpura, erythema nodosum, some cases of glomerulonephritis, serum sickness, transfusion reactions, thromboangiitis obliterans and ulcerative colitis have been listed as collagen diseases.

Wegener's granulomatosis [40] is a syndrome characterized by sinusitis, necrotizing granuloma of the upper and lower portions of the respiratory tract, renal insufficiency, arthralgia, and diffuse vasculitis with circumscribed and occasionally cavitating pulmonary parenchymal lesion which may resemble metastatic

---

* Presented as the Sixth Annual Menville Lecture at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, May 5, 1959, in New Orleans.

† From the Department of Medicine, Division of Radiology, Tulane University and the Department of Diagnostic Radiology of Charity Hospital, New Orleans.

disease. This may be a renal-respiratory subtype of polyarteritis nodosa.

"Spectrum" of Collagen Diseases

There are many patients who seem to have only a few of the characteristics of a given collagen disease [30, 31] or in which the changes may be limited to certain portions of the body. The usual case of systemic lupus erythematosus, polyarteritis nodosa, scleroderma, dermatomyositis and rheumatic fever shows involvement of small blood vessels throughout the body. Yet we see polyarteritis of the abdominal vessels only in some patients who have had a resection of a coarction of the aorta. Another patient with multiple small nodules in both lungs had a pulmonary biopsy which showed polyarteritis; this patient had no renal involvement or any other of the usual systemic changes at the time of pulmonary biopsy (Figure 1).

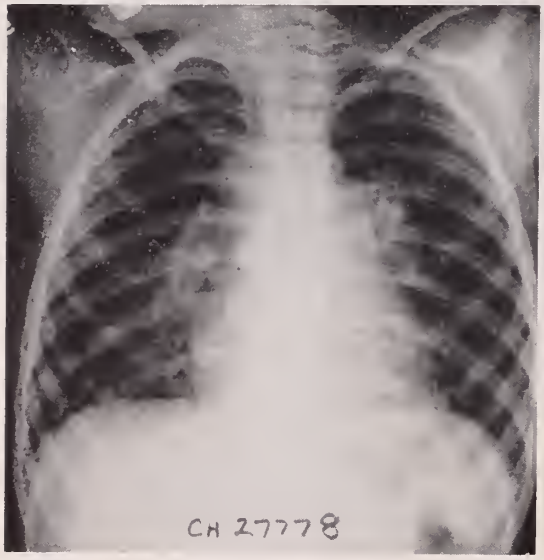


Figure 1. Polyarteritis. Multiple small pulmonary nodules. Hilar vessels and nodes prominent.

Some patients with granulomas and angiitis do not present all of the characteristics of Wegener's granulomatosis. A few will show the facial and upper respiratory lesions without pulmonary and renal changes. Churg and Strauss [7] also described a related but slightly different type of granulomatosis. These patients had clinical stigmata of allergy. The vascular lesions showed eosinophils in and around the blood vessels and the granulomas showed a peculiar palisade arrangement of epitheloid cells about a central necrotic core.

Another indication of the somewhat vague borderlines in these diseases was shown in an autopsied patient who had changes of polyarteritis in the chest and vascular lesions of lupus erythematosus in the kidneys and other abdominel organs.

Clinical and Pathological Considerations

The etiology, clinical, laboratory, electrocardiographic and pathologic findings in collagen diseases have been covered in previous publications.[8, 30, 31, 34, 35]

Although the etiology remains unknown the rather frequent anamnestic finding of previous food allergy, asthma, urticaria, blood transfusions, and drug administration indicates that hypersensitivity may play a role.[3, 7, 10, 33]

Usually multiple systems are involved. They include most frequently the skin, respiratory, cardiovascular, urinary and gastrointestinal systems. The onset in each condition may be variable. Clinical and laboratory findings may be similar.

Secondary anemia, reversal of the albumin-globulin levels in plasma, elevated erythrocyte sedimentation rate and various electrocardiographic abnormalities are common in all of these conditions.

Leukocytosis is common in all except disseminated lupus erythematosus, in which leukopenia is more common. Eosinophilia is most common in polyarteritis but is seen to a moderate degree in some patients with disseminated lupus erythematosus. The latter also has one of the most specific laboratory tests, namely the LE Cell or LE rosette phenomenon.[18]

Albuminuria and urinary sediment similar to chronic glomerulonephritis may be seen in all of the systemic collagen diseases. Telescopic urinary sediment, which contains red cell casts indicating acute renal involvement and waxy or hyaline casts indicating chronic renal involve-

ment, has been described in polyarteritis and disseminated lupus erythematosus.

The formation of fibrinoid in the extracellular space of connective tissue and the widespread involvement of blood vessels form the basis upon which pathologic changes are produced in the various collagen diseases. The pathologic changes vary in the different collagen disorders in that different vessels or organs may be involved more frequently and the cellular reaction may vary.

General Roentgen Findings

All organs may be involved to some extent by these disorders. Roentgenographic findings are most commonly demonstrated in the lungs, heart, and gastrointestinal tract. Other findings are described under specific disease headings below.

Changes in the small vessels of the lungs or heart were described in 28 of a series of 34 autopsies of five collagen disorders. Roentgen findings in the thorax were seen in two-thirds of a series of 109 patients at some time during the course of the disease.[30]

In general, the individual roentgen signs are not specific. However, when these signs occur in combinations or in chronologic sequence they may be strongly suggestive. Interstitial pneumonitis, pleural effusion, nonspecific cardiac enlargement [25, 39] and mild abdominal distention due to partial obstruction or adynamic ileus [14, 20] are common findings in most collagen disorders and reflect the widespread involvement of small blood vessels. The occurrence of two or more of these signs in combination or chronologic sequence should cause one to suspect one of the collagen diseases.

Pulmonary edema is a nonspecific sign which may follow cardiac or renal failure in any of the collagen diseases.

Clinical and roentgen signs of rheumatoid arthritis are seen in polyarthritis, scleroderma, and dermatomyositis, suggesting that rheumatoid arthritis is a part of the over-all systemic disease in these patients.

Differential Roentgen Diagnosis

The roentgen signs given above are common to several or all of the collagen disorders. There are additional signs which when combined with the more general signs may actually be of differential diagnostic significance.

Bilateral hilar vascular prominence, possibly secondary to pulmonary hypertension, is most commonly noted in polyarteritis.[23, 34, 37] Multiple small nodules may be present in the lung, representing small vascular lesions. Single or multiple larger nodules measuring 2 to 4 cm. in diameter are probably caused by infarcts,[12, 37, 38] and rupture of these may lead to pneumothorax or hemopneumothorax.

Disseminated lupus erythematosus tends to produce a polyserositis which may involve the pleura,[27] pericardium and peritoneum. Very small vessels are involved including those of the endocardium and cardiac valves.[1, 2, 19, 26, 29] There is also a tendency to produce small patches of atelectasis and pneumonitis, which has been called "atelectasing pneumonitis".[25]

Systemic scleroderma tends to form interstitial pulmonary fibrosis [6, 9, 15, 16]



Figure 2. Systemic scleroderma. Interstitial fibrotic change with appearance of multiple small cystlike radiolucent areas chiefly involving the lower two-thirds of both lungs.

which at times may appear as multiple tiny nodules or small cystlike radiolucent spaces in the lower two-thirds of both lungs (Figure 2). These patients often have dysphagia and barium study reveals a moderately dilated aperistaltic esophagus.[17] Reynaud's phenomenon [24] is frequent and there may be atrophy of the distal phalanges of the fingers with soft tissue calcification. Soft tissue calcification also occurs in the subcutaneous regions, especially in pressure-bearing areas, the annulus fibrosus of the heart and the capsule of the liver and spleen.[4, 17] Absorption of the peridontal membrane has also been described.[36]

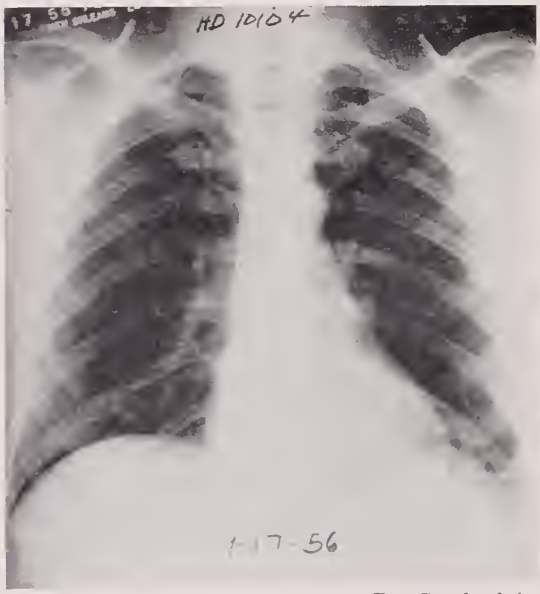


Figure 3. Dermatomyositis A-D. Gradual increases in cardiac size and pulmonary interstitial changes partially resolving after steroid therapy.



Figure 3B

In the past very few roentgen signs have been described in dermatomyositis.[14] Subcutaneous calcification has been noted in advanced cases. Recently it has been shown that some of these patients have vascular changes in the lungs that lead to interstitial inflammatory changes, fibrosis and emphysema (Figure 3). The heart may gradually enlarge,[41] as in other collagen disorders. The fibrotic

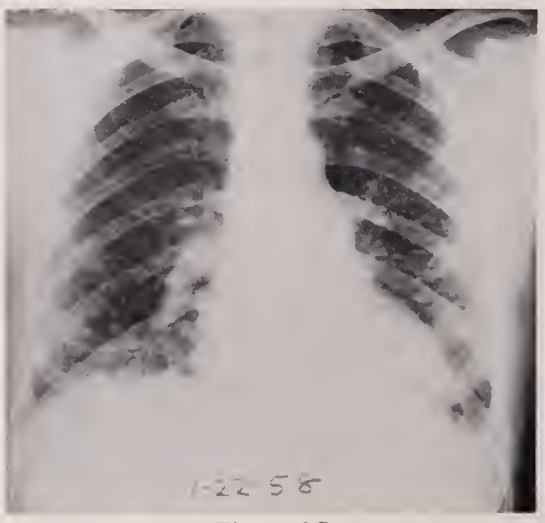


Figure 3C

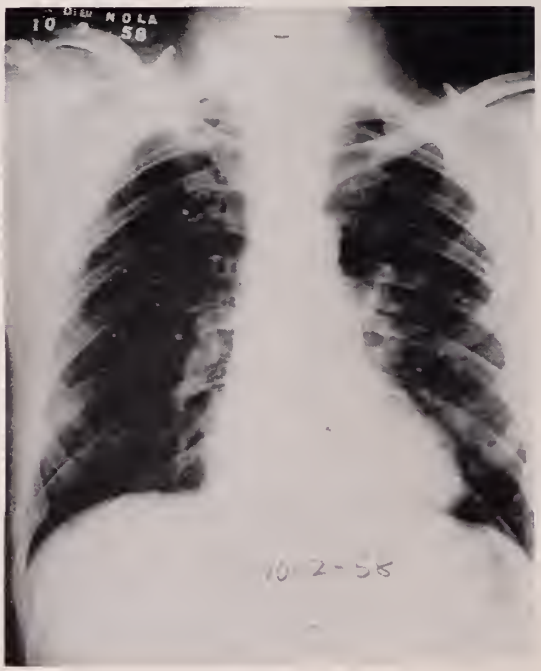


Figure 3D

changes do not tend to form tiny nodules or the cystlike changes which may occur in scleroderma.[5, 28, 32] Furthermore, these patients may have dysphagia and show an absence of esophageal peristalsis and may have an ileus similar to scleroderma. In patients with advanced disease it may be difficult to differentiate systemic scleroderma and dermatomyositis clinically and even on histopathologic study.[39]

Patients with rheumatic pneumonitis [26, 29] usually have a history of rheumatic heart disease. Respiratory distress, cough, chest pain, cyanosis, and hemoptysis are prominent and out of proportion to the general health status of the patient and to the degree of cardiac involvement. Evidence of active rheumatic carditis is noted in all cases.[26] The roentgen diagnosis of rheumatic pneumonitis may be suspected in a patient who shows signs of rheumatic heart disease with evidence of localized patches of pneumonitis before or between episodes of cardiac failure. If there is pulmonary vascular engorgement and edema the pneumonitis may be masked unless there are prominent localized infiltrates.



Figure 4. Wegener's granulomatosus, A. Nasal lesion involving medial walls of maxillary sinuses.

Wegener's granulomatosis apparently is related to polyarteritis histologically. The destructive lesion in the nose may cause destruction of the medial wall of one or both maxillary sinuses (Figure 4A). This destructive lesion has also been called midline lethal granuloma. The nasal lesion may be seen in the absence of obvious pulmonary lesions and vice versa. When pulmonary changes are present there is a tendency to form prominent nodular lesions some of which may cavitate (Figure 4B).

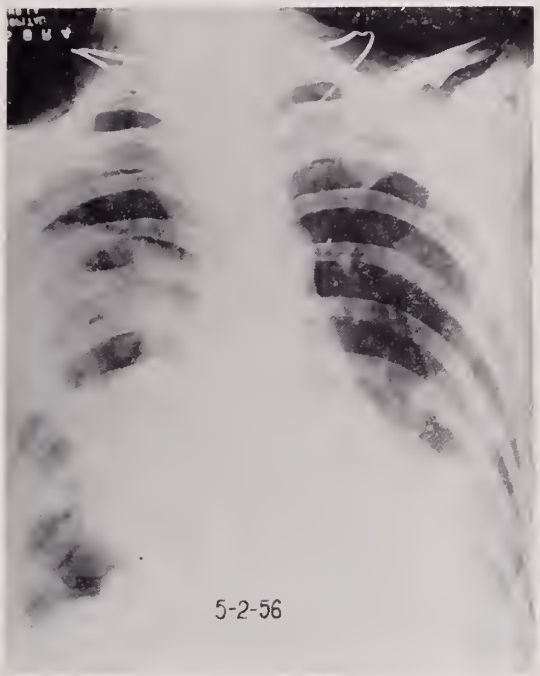


Figure 4. B. Pulmonary nodules with cavitation.

Discussion

All of the collagen diseases may involve the skin and various internal organs in various degrees and therefore tend to show great variability and a tendency to overlap clinically and pathologically. There may be no roentgen signs or the signs which are present may be said to be largely of a confirmatory nature, the evolution of which may reflect the general course of the disease process in question. At times the clinical diagnosis may be made long before any positive roentgen signs are present. However, the presence of combinations

of signs mentioned above may allow the presence of a collagen disease to be suspected. Further, when a collagen disease is suspected on clinical and roentgen evidence a thorough roentgen investigation may aid in differentiating the various types of collagen disorders. Incidental pneumonia or pulmonary edema secondary to cardiac or renal failure may occur in any of these conditions which tends to mask other signs.

Conclusions

Various nonspecific roentgen signs occur in collagen diseases which may be of confirmatory nature largely reflecting the clinical course of the disease in question.

Various combinations of nonspecific cardiac enlargement without pulmonary vascular engorgement, interstitial pneumonitis, pleural effusion and ileus may suggest the presence of a collagen disorder.

Other roentgen signs may be of value in differentiating the various collagen diseases.

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Discussions

Dr. Edgar H. Little (New Orleans): I had the privilege of knowing Dr. Leon Menville personally for a number of years, and I am certain that he would have been most interested in the content of this paper dealing with the group of intriguing diseases which have been classified generally as collagen diseases. I am sure his interest would revolve particularly around the challenge that these diseases offer in radiologic diagnosis, as he was always able to meet challenge with achievements in his chosen specialty of Radiology.

Collagen diseases constitute an interesting group of disorders. They are interesting to the clinician because of their diagnostic and therapeutic challenge, to the pathologist because of recent interest in intercellular substances, and to the radiologist because of the challenge of differential diagnosis. The symptoms and diagnosis are not as clear-cut as an attack of gout, cerebral thrombosis or peptic ulcer. From the standpoint of the radiologist, it has only been in relatively recent years that we have learned to recognize certain aspects of collagen diseases. In my old textbooks on x-ray diagnosis, polyarteritis nodosa and lupus erythematosus were not even listed in the index, and we usually thought of the diagnosis of these diseases as dependent entirely on clinical history, findings, and biopsy and therefore of no particular interest to the radiologist.

As Dr. Nice has so clearly pointed out, we are now able to suspect, if not conclude, the presence of a collagen disease from the roentgenograms, particularly if the disease is systemic and the roentgen findings occur in combinations with sequential studies.

The roentgen examination can also serve to differentiate one collagen disease from another as well as to check the course of the disease, since changes may be reversible when there is a satisfactory response to therapy. Certainly, my experiences with collagen disorders agree with those of Dr. Nice.

Skeletal and gastrointestinal changes in scleroderma are quite diagnostic. Cardiac and pleuropulmonary changes are much more subtle but are open to ready analysis because of present day widespread availability of the chest study. Pericardial effusion, cardiac enlargement, pleural effusion, pulmonary nodular changes and variable degrees of pulmonary edema or fibrosis may occur. In instances where only one or two of these findings are evident, it is obvious that an out and out diagnosis of a collagen disease would be equivocal. However, it is to be emphasized that in such instances it is desirable that radiologists, as clinicians, be able occasionally at least to suggest the consideration of one of these diseases, on logical grounds, and be cognizant of the further studies, clinical, laboratory or pathological, required to confirm the diagnosis. It is also desirable, in these obscure cases, that radiologists and clinicians pool their information, in close cooperation, in an effort to conclude a diagnosis.

Historical Notes

The only real progress made by mankind has been in the exact sciences, as Chemistry, Botany, Astronomy, Mathematics, Natural Philosophy, Mechanics, etc., which is almost Godlike, and in this the inferior races take no part whatever. It is humiliating to look on the infirmities even of genius. Lord Bacon in morals was beneath contempt. Napoleon, Alexander, Caesar, Frederick the Great, were only great highway robbers, who trampled morals, religion, and everything under foot to attain their ends.

J. C. Nott: Instincts of Races, New Orleans M. & S. J. 19:9 (July) 1866.

Steroid Diabetes*

• All aspects of this problem are far from solved. In the normal individual the incidence of steroid diabetes is only one per cent.

F. GILBERT McMAHON, M. D.
New Orleans

STEROID diabetes is a type of diabetes mellitus induced by adrenal cortical steroids. Steroid diabetes, like steroid ulcer, steroid hypertension, steroid psychosis, steroid purpura, etc. might be considered a side-effect of corticosteroid therapy. For those of you who are "lumpers" and prefer to classify things, Table 1 shows where steroid diabetes might fit into Randle's classification [1] of clinical diabetes.

TABLE 1.
CLASSIFICATION OF CLINICAL TYPES OF DIABETES MELLITUS *

I	ESSENTIAL DIABETES
	A. Severe Form
	B. Mild Form
	1. Obese
	2. Non-obese
II	SECONDARY DIABETES
	A. Post-pancreatectomy, pancreatitis, pancreatic Ca, etc.
	B. Acromegaly
	C. Hyperadrenocorticism
	1. Endogenous (Cushing's Syndrome)
	2. Exogenous (Steroid Diabetes)
	D. Hyperthyroidism
	E. Pheochromocytoma
	F. Lipoatrophy

* From Randle, P. J.: Endocrine Factors in the Syndrome of Diabetes Mellitus. Modern Trend in Endocrinology, Harold Gardiner-Hill, Paul B. Hoeber, Inc. New York, 1958. Used with permission of the author and the publisher.

The terms "steroid" or "corticoid", hereafter shall refer to the so-called glucocorticoids, i.e., to the anti-inflammatory and anti-allergic hormones secreted by the adrenal cortex, or else to their synthetic analogs. Figure 1 reviews the configuration of the steroid nucleus, together with some of the more important endogenous steroids. Figure 2 reviews the structures and trade names of the currently available corticosteroids.

A complete discussion of steroid diabetes should include both the influence of diabetes on steroids and the effect of steroids on the diabetic state. However, neither the mechanism of steroid effects on carbohydrate metabolism, nor the nature of the metabolic defects in diabetes is fully understood. So that the most we can do is point out a few of the salient interactions of these two systems insofar as they are now understood.

Effects on Carbohydrate Metabolism

In 1930, Britton [2] showed that extracts of the adrenal cortex administered to normal or andrenalectomized animals caused both elevated blood glucose levels and elevated liver and muscle glycogen

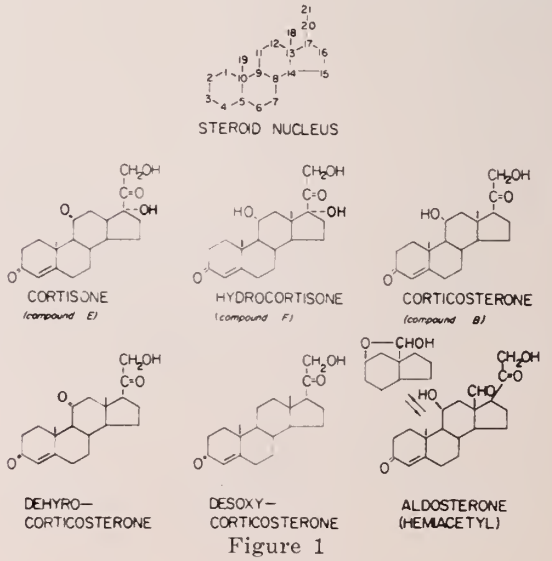


Figure 1

* Presented at the Louisiana State Meeting of the American Diabetes Association, Nov. 7, 1959, in Baton Rouge, La.

From Mahorner Clinic and Department of Medicine, Louisiana State University Medical School.

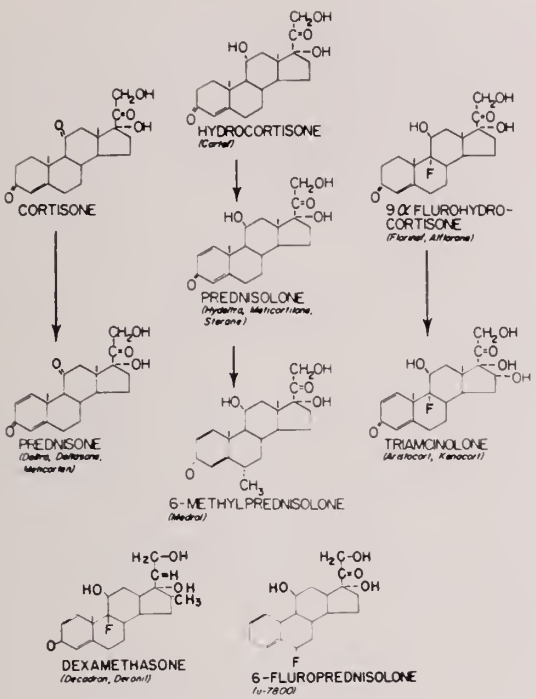


Figure 2

contents. In 1941, Dwight Ingle [3] reported the production of glycosuria when hydrocortisone was administered to normal laboratory animals. Since then it has been frequently shown that normal human subjects given large doses of ACTH or steroids will respond with elevated blood sugar levels.[4] The most pronounced effects of steroids on carbohydrate levels can be seen in diabetic subjects where steroid administration causes exacerbation of their hyperglycemia.

Endocrine-deficient states such as Addison's disease or panhypopituitarism have also been shown to respond to steroid administration with an elevation of blood sugar level. Thus it has been amply demonstrated that corticoids elevate the blood glucose level in a variety of conditions. But how do they elevate blood glucose? *Either they increase glucose production or they decrease glucose utilization.* There is good evidence that steroids enhance hepatic gluconeogenesis and cause an increased output of glucose by the liver. Among the various studies demonstrating this is the work of Stetten, et. al.[5] A constant infusion of C^{14} labelled glucose was given animals at a rate which caused glycosuria until a plateau of C^{14} excretion was reached. The specific activity of the urinary glucose was then compared with that of the infused glucose and from this ratio and the rate of glucose infused, he calculated the rate at which glucose was being generated. Then he gave cortisone for six days and found a sevenfold increase in glucose formation over that of control animals.

Other studies of Altszuler, et al.,[6] Lang, et al.[7] and others give convincing evidence that corticoids enhance gluconeogenesis. As to the effect of steroids on glucose utilization, the evidence is very conflicting. Studies have been done using hepatectomized animals, eviscerated animals, intact animals, as well as in vitro studies. Reports have appeared of decreased glucose utilization, increased utilization or no effect. This aspect of the problem is far from resolved. Glycosuria has been occasionally noted despite normal carbohydrate tolerance.[8] Both a rise in glomerular filtration rate [9] and a decrease of maximum tubular reabsorption [10] of glucose have been reported following steroid administration to explain this phenomenon.

Effect on Diabetic State

The adrenal steroids also inhibit the hypoglycemic effect of insulin. This phenomenon has been amply demonstrated, but, here again, the mechanism has not been worked out. Perhaps the ultimate clinical demonstration of this is the regulation of hypoglycemic reactions due to metastatic functional Islet cell carcinoma.[11, 12] In 1910, Porges [13] pointed out the frequency with which hypoglycemic reactions occurred in Addisonian patients. In 1925, Maranon [14] demonstrated the marked sensitivity of these patients to small doses of insulin. Recently Beaven, Thorn, et al.[15] reviewed the 63 cases in the literature of the simultaneous occurrence of diabetes and Addison's disease in the same individual. In 17 Addisonian patients who subsequently developed diabetes, the dose of insulin needed before

cortisone was given averaged 16 units/day. After giving cortisone in replacement doses, the average dose of insulin required rose to 27 units/day. Just as these observations of Addisonian patients demonstrate some "anti-insulin" effect of the steroids so, too, does the well-recognized decreased sensitivity of the Cushing's patient to insulin. Just how the steroids exert their anti-insulin effect is not yet clear, but it seems to be an indirect action.[16, 17]

Characteristics of Steroid Diabetes

In 1949, Sprague[18] reported the production of a diabetic glucose tolerance test in normal patients given 200 mgm./day cortisone. In 1950, this same investigator termed this phenomenon "steroid diabetes".[19] It has long been recognized that patients with Cushing's syndrome frequently have diabetes. The incidence of disturbed carbohydrate tolerance has been variously given from 50 to 75 per cent or 88 per cent[20-22] and frank diabetes in from 10 to 25 per cent.[23] We can obtain virtually all the features of exogenous steroid diabetes by considering the Cushing's patient. His hyperglycemia is difficult to control with diet and insulin. Ketoacidosis rarely occurs and diabetic coma has not been reported in the Cushing patient. He demonstrates the anti-anabolic effects of hypersecretion of adrenal steroids with negative nitrogen balance, osteoporosis, muscle wasting, friable skin, etc. When his adrenal glands are removed, his diabetes usually disappears. Finally, when a Cushing's subject is fasted his glycosuria diminishes. These characteristics of steroid diabetes are listed in Table 2.

In 1958, there were in excess of 100 million dollars in prescriptions written for corticoids in the U. S. Who among these tens of thousands of patients receiving steroids will get diabetes? How can it be prevented? How can it be treated?

TABLE 2.
CHARACTERISTICS OF STEROID DIABETES

1. Relative insulin resistance
2. Rarely keto-acidotic
3. Glycosuria diminishes with fasting
4. Negative nitrogen balance
5. Reversible by withdrawing steroids

When the nondiabetic, normal subject is given a sufficiently large dose of any one of the currently available steroids, he will initially develop a decreased carbohydrate tolerance. A single small oral dose given to produce hyperglycemia has even been used as a suitable method for assaying the potency of these steroids.[24] If a large dose is given continuously, the normal individual will develop a tolerance within a few days and re-establish euglycemia. The explanation generally offered for this is that in the normal subject there is sufficient functional reserve in the beta cells to produce greater amounts of insulin in response to the hyperglycemic stimulus.

At the other extreme, there exists such a small dose of corticoids that no clinically detectible hyperglycemic effect will be produced. We can, therefore conclude that dose and duration seem to be factors in the production of steroid diabetes. The nature of the corticoid is another factor. In spite of the widely advertised safety factor in administering dexamethasone even to diabetic subjects, *all* of these clinically popular steroids can produce diabetes. The hyperglycemic principle is built into the very anti-inflammatory or anti-allergic nature of these drugs. I have personally produced steroid diabetes with Decadron in a young Negro patient with far-advanced pulmonary tuberculosis in a tuberculosis hospital where steroids were being given to all seriously ill patients along with combined antituberculous therapy. Now I notice that this same pharmaceutical house is advertising in our medical journals that Decadron is safe to give the hypertensive. I should like to deviate for a moment and say a word about side-effects of the corticosteroids.

Side Effects of Steroids

Table 3 represents an effort to classify side-effects of steroids based on the risk involved to the patient.[25] Class I

TABLE 3.
CLASSIFICATION OF SIDE-EFFECTS OF CORTICOSTEROIDS

CLASS I:	Minimal risk to the patient; chiefly of cosmetic significance
	Redistribution of body fat
	Striae
	Acne
	Hypertrichosis
	Plethora
CLASS II:	Minimal risk unless patient predisposed
	Diabetes mellitus
	Steroid ulcers
	Electrolyte imbalance
	Mental disturbances
	Thrombophlebitis
	Hypertension
	Spread or masking of infections
	Protein catabolism
	CNS convulsions
CLASS III:	Always a major risk
	Class II side-effects in a predisposed patient
	Chronic hypercorticism
	Induced adrenal atrophy
	Collagen disease (?)

side-effects are virtually inevitable results of employing suppressive doses for maintenance therapy. These are of minimal importance in a patient who otherwise needs steroids. Class II side-effects are also minimal hazards if the patient is not predisposed. If there is a family history of diabetes, or a borderline glucose tolerance test, if the patient is previously hypertensive, or has a history of peptic ulcer, the administration of steroids leaves the physician with a much greater responsibility to watch for these potential complications and to employ prophylaxis when possible. Edema formation and electrolyte imbalances are not so common with the newer steroids.

Incidence From Use of Steroids

By far the vast majority of patients receiving steroid therapy do not develop steroid diabetes. The incidence is less than 1 per cent. If the diabetic patient truly needs steroids, there should be no hesitation about their use. He may only require 15 to 20 units/day more of his insulin. The refractoriness of such patients to insulin is usually only relative. When the steroid therapy is withdrawn, of course, the steroid diabetes disappears within a few days. In nondiabetic subjects the production of a permanent case of diabetes is an acceptable and rare risk.

It is generally felt that a familial deficit in the potential reserves of the beta cells predisposes to the development of diabetes under sustained stress. The production of diabetes following pregnancy, burns, fractures, surgery, or the continued administration of large doses of steroids probably only occurs in the prediabetic subject. If one wishes to exclude the diabetes-susceptible patients before giving steroids, the cortisone glucose tolerance test of Conn might well be helpful.[26]

The treatment of steroid diabetes is either the administration of extra insulin, or the withdrawal of the steroid. As Reifinstein [27] has often suggested, the co-administration of combined estrogen-androgen may well maintain a positive nitrogen balance during corticosteroid administration.

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UNIVERSITY OF LOUISIANA: MEDICAL DEPARTMENT

The twenty-ninth Annual Course of Lectures in this Department will commence on Monday, the 12th of November, 1866, and terminate on the 24th of March, 1867.

Preliminary lectures will be delivered in the Amphitheatre of the Charity Hospital, beginning the 15th of October, on Clinical Medicine and Surgery, without any charge to students.

Notwithstanding the exhausted condition of the Southern States, resulting from the late disastrous war, the class of the session of 1865-66, numbered one hundred and eighty-four Matriculates, which far exceeded the expectations of the Faculty, and is an earnest of the renewed success of the Institution.

The Institution is endowed by the State; and the Legislature, at its last session, recognizing the vast importance of the University to the State, and to the Southern section of the country generally, made ample provision for repairing, extending, and improving the buildings, purchasing additional apparatus, and otherwise increasing the facilities for instruction.

Annual Circular of the Medical Department of the University of Louisiana: New Orleans M. & S. J. 19:5 (July) 1866.

Current Management of Hepatitis*

• Experience with viral hepatitis is reviewed by the author, who presents a therapeutic regimen, which has been found to be successful in about 92 per cent of the patients who were subjected to it.

EDWARD R. CHRISTIAN, M. D.
New Orleans

VIRAL hepatitis is usually a benign and self-limited disease whose very nature encourages complacency in both its victim and his physician—yet it may pursue a relentless course and fulminate in death while the physician, lacking a specific therapeutic tool, is helpless to intervene. Its deceptive character is all the more tragic because the disease prefers to strike young adults who are essential to the stability of the home. Even if the disease does not terminate fatally, its import is exaggerated by the threat of prolonged morbidity. When its course is benign and free from complication, as it is in the majority of cases, the average period of morbidity exceeds two months; furthermore, over half of that time is spent in greatly reduced activity if not bed rest. The unfortunate victim who feels compelled to return to full physical activity before the disease has completely subsided does so at the risk of a recrudescence with further debility and, perhaps, progression to permanent liver damage. The purpose of this paper is to review our experience with viral hepatitis and to present a therapeutic regimen, established through trial and error, that has been successful in restoring to apparent good health about 92 per cent of the patients subjected to it.

In the absence of a specific cure for the disease, current treatment of the usual case of viral hepatitis hinges upon rather simple hygienic principles that can be employed in the home as well as in the hospital. Obviously, all patients with the disease cannot be hospitalized for one reason or another, nor is it advocated that they should be. Patients are either frightened into seeking hospitalization by the appearance of jaundice (in a recent series only 10 of 107 patients were not jaundiced when admitted [1]), or are referred by their physicians. Referral often implies unusual severity of the disease and/or impracticability of adequate home treatment. In the series just mentioned the average patient (exclusive of those with chronic disease and of those who died) was ill for sixteen days prior to hospitalization. It is evident, then, that during the phase of the disease when the greatest havoc is being wrought in the liver, the average victim is not subject to the therapeutic discipline of the hospital and, in all likelihood, has not as yet sought the aid of his physician. Perhaps in that interlude between the onset of the disease and the institution of adequate treatment lies the cause of the prolonged morbidity that characterizes viral hepatitis. The hospital remains the place where the strict regimen often necessary in the treatment of the disease can be carried out most effectively.

Treatment

A. **Rest**: Rest is regarded as the most important single element in the treatment of hepatitis. In these days of public awareness of more dramatic therapeutic measures, rest often becomes an ethereal thing imposed with difficulty on patients who may be deeply jaundiced, yet may feel well. The physician must determine the degree of rest that is necessary and over what period it must be imposed. Moreover, he must deal with

* Presented at the Seventh-ninth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 5, 1959.

the dismal problem of the patient who cannot obtain the prescribed amount of rest because of economic demands made of him.

It is thought that the patient with early acute hepatitis should undergo a period of strict bed rest the duration of which is determined by the observation needed to anticipate the probable course of the disease. Even this may be difficult, however, since progressively severe hepatic damage has followed trivial attacks of hepatitis and, to the contrary, minimal hepatic damage has followed severe, life-threatening attacks of the disease. Strict bed rest as used here implies loss of bathroom privileges.

Laboratory tests are the best available guides for resumption of physical activity — particularly, the determination of serum bilirubin, 2-to-4 p.m. urine urobilinogen and bromsulfalein retention. Bathroom privileges are allowed once the serum bilirubin has reached its maximum level and has begun to decrease. Bed rest is terminated when the serum bilirubin has decreased to 1.0 mg. per cent or less, and the 2-to-4 p.m. urine urobilinogen output is less than 1.0 Ehrlich unit.

Improvement in those laboratory tests should be, and generally is, paralleled by subjective improvement; however, persistence of morbidity calls for additional bed rest even if liver function tests are normal. After the period of strict bed rest is over, gradual ambulation of the patient is allowed until he has the freedom of the hospital or his home. Greater freedom of activity is allowed once the retention of bromsulfalein is 10 per cent or less at 45 minutes (5 mg./kg. dose). It is advised that periods of rest be included in the day's schedule until bromsulfalein retention has decreased to 5 per cent or less at forty-five minutes. During this period of convalescence and for several months thereafter hepatotoxic substances must be avoided.

Hepatic function tests should be repeated at intervals for evidence of deterioration and the patient should be examined for recrudescence of disease. Ominous signs include loss of appetite, jaundice, and darkening of urine. The latter sign, which seldom fails to attract the attention of the patient, is respected as a harbinger of active hepatitis because it often antedates frank jaundice. Any recrudescence of symptoms and/or deterioration of liver function tests during the convalescent phase calls for resumption of bed rest with subsequent graduation of activity in the manner just described. At this point it should be added that patients with persistent jaundice, particularly with history of previous episodes of asymptomatic jaundice, should be submitted to needle biopsy of the liver. By that means differentiation between chronic hepatitis and the Dubin-Johnson syndrome can be made.

B. **Diet:** In the treatment of viral hepatitis we have gone through a period of overly zealous approach to dietary management. Such a period was undoubtedly a natural sequela to the importance traditionally attached to the influence of diet in the treatment of cirrhosis. It must be recalled, however, that the victims of hepatitis are usually young persons who have been in previous robust health and excellent nutritional state; therefore, they are not subject to the deleterious effects of poor nutrition that plague the person with cirrhosis. It seems, then, that the diet prescribed for the usual victim of hepatitis is adequate if designed to prevent the development of deficiencies during the course of the disease. Of course, this does not infer that these patients who are malnourished prior to the onset of hepatitis should not have their deficiencies corrected through a more aggressive dietary program. The need for such action is highlighted by the added severity that hepatitis assumes in debilitated folk.

Early in the course of the disease problems which arise relative to dietary management include anorexia, nausea, and vomiting. During that phase adequate fluid and caloric intake can best be af-

forded through the parenteral administration of glucose solutions, plus the necessary vitamins and electrolytes to maintain physiological levels. When anorexia is profound it is advisable to administer such supplements on an "around-the-clock" schedule, thus avoiding any lengthy period when the damaged liver is deprived of an adequate supply of glucose. It is important that the physician resort to an accurate food intake tally in determining how much parenteral feeding is necessary, for the word of the anorexic patient is not trustworthy. To him a forkful becomes a plateful, and any quantity of food that satisfies his appetite is interpreted as an adequate meal, regardless of how small it might be.

Once the appetite has returned and parenteral supplements are no longer indicated, one is faced with the problem of what to feed and how much. It is thought that the patient's appetite can then serve as the best guide in dietary management. A general diet is recommended with added portions to bring the daily caloric intake to between 2500 and 3000. Included in such a diet are about 100 grams of protein and 70 to 100 grams of fat. In the usual case of hepatitis there is no real need for a greater quantity of protein, especially in view of the failure of comparatively enormous quantities to alter the course of the disease significantly. However, additional protein may be indicated when a previous deficiency exists, or when the disease causes a failure in protein synthesis incident to liver damage. Stringent fat restriction has been passé in the treatment of hepatitis since it became evident that food containing little fat is so unsavory that appetite is seriously hampered. Furthermore, fats cause no demonstrable harm to patients with hepatitis who tolerate them quite well, particularly those of dairy origin. They need not be restricted unless there is an aversion to them, in which event the patient usually foregoes them voluntarily.

In our experience the plan of treatment outlined so far, which insists only upon adequate rest and common-sense dietary control, will restore to good health the great majority (roughly, 90 per cent) of patients with viral hepatitis. Occasionally, however, one fails to respond to the regimen, but progressively deteriorates.

The following are signs that call for aggressive action in an effort to forestall hepatic coma, a state from which there is seldom a return: (1) progressive subjective deterioration in spite of adequate treatment; (2) deepening jaundice; (3) progressive lengthening of the prothrombin time in spite of adequate parenteral supplement of vitamin K; (4) progressive increase in the ratio of free:total serum cholesterol. About 1 per cent of patients who develop hepatitis will exhibit those ominous signs and die. What else can be offered the severely ill to keep him out of that one per cent?

Other Supportive Measures

A. **Hormones:** Although their routine use in the uncomplicated case of hepatitis is not recommended, adrenocortical hormones and adrenocorticotropic hormone (ACTH) offer considerable promise of benefit if employed as soon as inadequacy of conservative therapy is suspected. By this time most of us have had apparently moribund victims of hepatitis make dramatic and seemingly miraculous response to one of these hormones. ACTH is preferred if the ratio of free:total cholesterol is within normal range, and it is administered by slow intravenous drip in dosage of 25-40 mg. daily. If the ratio of free:total cholesterol is abnormally high, however, cortisone is the hormone of choice—or one of the newer steroid hormones. Cortisone is administered intramuscularly in an initial dose of 300 mg., thereafter reduced by 25 to 50 mg. daily until the minimal effective dose is established. Once committed to the use of either hormone, the physician is obliged to continue its use until recovery is certain; i.e., overtreatment is less dan-

gerous than premature withdrawal of the hormone.

Contrary to the usual situation in hepatitis, fluid and electrolyte balance now must be followed closely, particularly the serum potassium. Whereas ACTH and cortisone induce a potassium diuresis that may necessitate supplement of the ion, the severely ill patient who becomes oliguric may have hyperkalemia that demands reduction of potassium intake. Patients receiving either ACTH or steroid hormone are placed upon low-sodium diets.

B. **Blood:** Failure of prothrombin synthesis by the damaged liver leads to a hemorrhagic tendency that may have serious proportions. It is not uncommon for acute blood loss to be involved in the death mechanism in fatal hepatitis. Transfusion of fresh whole blood is indicated when response to parenterally administered vitamin K is lacking and signs of hemorrhage appear.

C. **Oxygen:** Hypoxia is devastating to the damaged liver, therefore the organ should be supplied with maximally oxygenated blood.

D. **Antibiotics:** Antibiotics have been employed to reduce intestinal flora, thereby reducing the streaming of bacteria and their products through the damaged liver. We have seen little benefit from antibiotics in the treatment of viral hepatitis, and do not use them routinely. However, progressive deterioration of a patient warrants some measure of empiricism and we are not adverse to using antibiotics under those circumstances. In addition, the patient in imminent danger of hepatic coma, particularly if gastrointestinal bleeding has occurred, may be given purgatives to remove products that might augment the blood level of ammonia-like substances.

E. **Lipotropes:** Fatty metamorphosis is of such rare occurrence in viral hepatitis that its demonstration casts doubt on the diagnosis. Therefore, one would expect little benefit from the use of lipotropic substances in the treatment of the disease. However, since methionine must be present in the parenchymal cell to prevent its necrosis, it is advisable to insure an adequate supply of that amino acid.

F. **Protein hydrolysates:** In the patient who has a failing nitrogen balance, the question arises as to safe, adequate replacement. Coma is the most dreaded event in the course of fulminating hepatitis, for it almost invariably precedes death. What causes hepatic coma remains an enigma, but to date derangements in ammonia metabolism have been indicated as the most plausible explanation. In that light it seems illogical, if not dangerous, to administer protein products unless they are needed and then only if the patient can tolerate them without developing symptoms and signs indicative of protein intoxication. The prodromal phase of hepatic coma is easily recognized clinically, but the clinical impression may be substantiated by a brain-wave pattern if the electroencephalograph is available. At the earliest sign of protein intoxication protein starvation must be instituted.

G. **Glutamic acid and arginine:** These materials may be used when hepatic coma threatens, for they bind ammonia during their biochemical involvement in the body—the former, in the synthesis of glutamine and the latter, in the urea cycle.

H. **Serum albumin:** This costly blood derivative has a questionable place in the treatment of severe hepatitis. It may be indicated if liver damage has seriously interfered with albumin synthesis. It may have some value in averting hepatic coma, inasmuch as we have seen one patient recover from coma (due to Laennec's cirrhosis) while under treatment with it.

I. **Liver extract:** Liver extract has fallen from its traditional place in the treatment of liver disease, but we use it empiracally in severe disease, hoping it offers some benefit however slight.

Other Considerations

A. **Problems in diagnosis:** The two diseases most commonly involved in the differential diagnosis with viral hepatitis, at least in this area, are Weil's disease and extrahepatic biliary tract disease with obstruction. Since early antibiotic therapy is often imperative in the management of Weil's disease, it is thought that empiric treatment is warranted in questionable cases until serological studies can be completed. Differentiation between parenchymal and surgical jaundice remains a problem in spite of extensive batteries of liver function tests and other diagnostic procedures. Needle biopsy of the liver will usually differentiate between the two and should, when practical, precede panicky surgical intervention in puzzling cases of jaundice. We have recently proven to our own satisfaction that the abnormally high elevation of serum iron that is peculiar to viral hepatitis is of distinct value in the differential diagnosis of jaundice.

B. **Prophylaxis:** Outside the military situation the family is probably the epidemiological unit in viral hepatitis (IH). If victims of the disease must remain in contact with other members of the family during the acute phase of the disease, the protective use of gamma globulin is advisable. This may be of added importance in view of recent demonstration that a carrier state of the disease exists. Families in which young children are the first to contract the disease should take added hygienic precautions, because the habits of small children easily lend themselves to fecal contamination of food and drink.

The poor prognosis of viral hepatitis (SH) in chronically ill patients dictates the belief that the transfusion of such patients with whole blood or the administration of its derived products should be regarded as a serious procedure of potential hazard to the patient. In a recent series [1] the death rate in transfusion hepatitis (SH) was 50 per cent as contrasted with a death rate of 4.7 per cent in infectious hepatitis (IH). The ever-present threat of inoculation hepatitis calls for constant alertness for breaks in technic in the proper sterilization of equipment used in the parenteral administration of medicaments.

Case Report

The following abstract records the events in a patient who, in our experience, was the most severely ill victim of hepatitis who survived the disease. Inasmuch as the patient did not respond to adequate conservative therapy, his recovery is regarded as a tribute to the lifesaving effect of steroid hormone (Figure 1).

The patient was a 43-year-old white man hospitalized with infectious hepatitis (IH) of two weeks' duration. His illness did not seem severe; nevertheless, he was placed on the established therapeutic regimen which included complete bed rest, special diet and supplementary vitamins. Serum bilirubin remained essentially constant at a moderately elevated level for about two weeks after the patient was admitted. Subjectively, he felt surprisingly well and had none of the classical signs that usually accompany the early phase of hepatitis, such as anorexia, nausea and vomiting. Shortly thereafter, however, the serum bilirubin began to rise progressively to its highest level, 25 mg. per cent. Concurrently prothrombin time lengthened and there was an increase in the ratio of free:total serum cholesterol. The patient's paradoxical sense of well-being continued to belie those alarming signs of progressive parenchymal necrosis.

At this point it is interesting to note that the serum iron had risen to 480 mcg. per cent as compared with the normal value of 143 mcg. per cent. Because of the confusing elements in the diagnostic picture that need not be described here, needle biopsy of the liver was performed on the forty-fourth day of illness and verified the presence of extensive necrosis compatible with viral hepatitis. The patient was then started on cortisone therapy and prompt decrease in serum bilirubin to 10 mg. per cent had occurred by the fourth day thereafter. From then on there was sustained subjective improvement that was watched by gradual return of liver function tests to normal.

The second biopsy of the liver was performed on the seventy-second day of illness and the twenty-seventh day of cortisone therapy. It revealed postnecrotic scarring and fatty metamorphosis. The latter is rare in the course of viral hepatitis and probably resulted from steroid therapy. Treatment with cortisone was extended

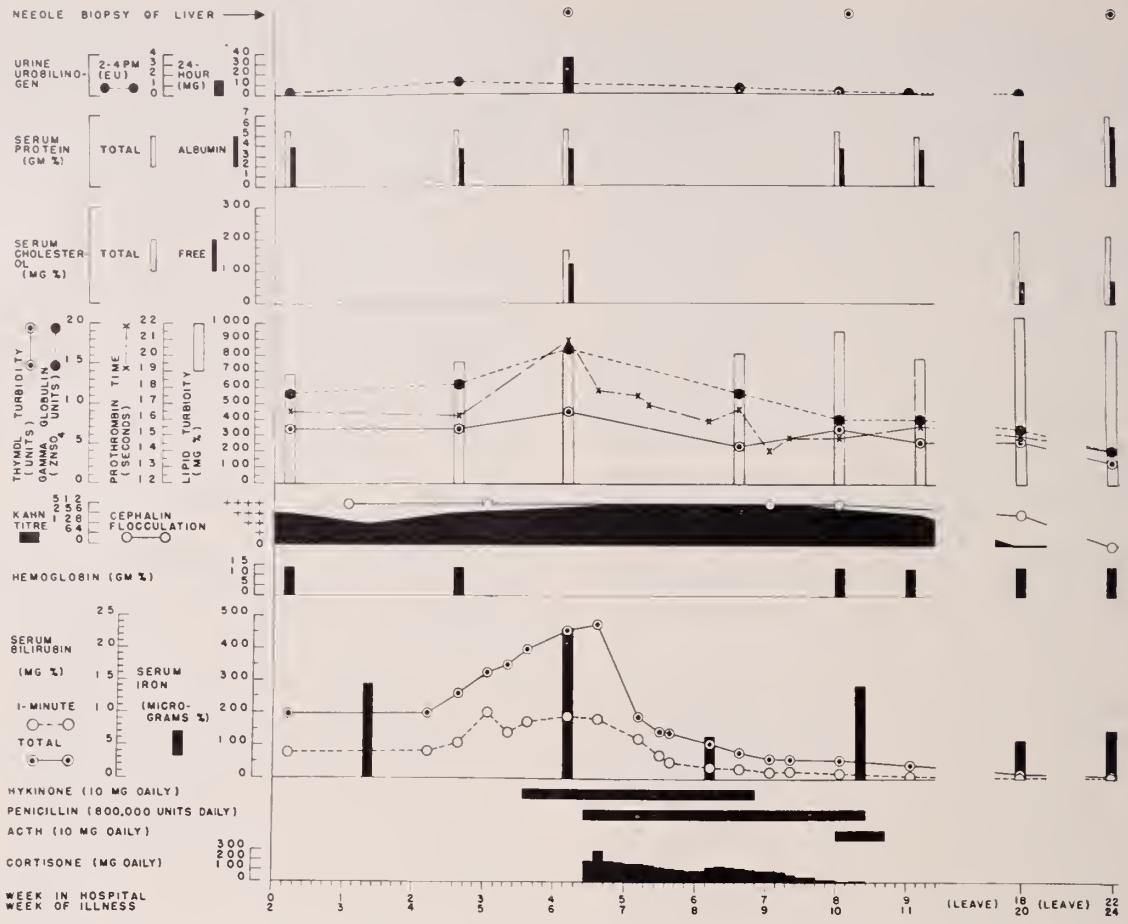


Figure 1. Summary chart of pertinent laboratory findings in a patient with severe hepatitis (IH). Note prompt decrease in serum bilirubin following institution of cortisone therapy.[1]

over a period of twenty-eight days; during the withdrawal phase small doses of ACTH were administered.

A month of therapeutic leave resulted in neither a recrudescence of symptoms nor deterioration in liver function tests; therefore, the patient was discharged from the hospital. The third biopsy of the liver was performed one hundred and sixty-eight days after the onset of the illness and revealed essentially normal tissue. At last report the patient was actively pursuing his occupation without apparent residual effects of his disease.

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Diagnostic Problems in Pulmonary Diseases*

• The differential diagnosis of pulmonary disease is often difficult. The more important procedures used in diagnosis are discussed, and nine case reports are cited.

DWIGHT S. DANBURG, M. D.
JACOB FAUST, M. D.
JESSE L. FAIRCHILD, M. D.
DENNIS PORCH, M. D.
Greenwell Springs

A PRESENTATION of the most common diagnostic problems relative to the diagnosis of pulmonary disease is being offered and an attempt is made to clarify some of the accepted procedures which aid in such diagnosis. A group of cases each illustrating a certain pertinent point will be included. Emphasis is placed upon the fact that no original research is presented in this paper but rather that it is a survey of the present methods and practices.

All these patients were admitted to the Greenwell Springs Tuberculosis Hospital with a presumptive diagnosis of active pulmonary tuberculosis. They were referred by either the respective local health units or private physicians. In the great majority of cases x-rays were diagnostic and sputa positive. However, in a smaller group, there were only suspicious roentgenologic changes and sputa were negative. Therefore, it is extremely important that specific diagnostic procedures be carried out accurately and as promptly as possible. In other words, the burden of proof at this particular interval must rest upon the assumption that this represents a case of active pulmonary tuberculosis.

One assumes that a very careful and detailed history and physical examination, including routine laboratory procedures, has been completed. Considerable information which may contribute to the diagnosis may be obtained by considering familial history, industrial contacts and careful questioning as to what geographical areas may have been inhabited. In addition, certain diagnostic procedures are used in making differential diagnosis in pulmonary diseases and the more important will be discussed.

I. Skin Testing

The intradermal tuberculin test—The value of the tuberculin test in the diagnosis of pulmonary disease increases year by year as fewer persons are exposed to tuberculous infection. It, therefore, becomes more important to understand the limitations of the test to allow better application and use. In general, a negative skin reaction to 1 to 100 OT or PPD No. 2 is believed to exclude the presence of active tuberculosis.

In reviewing the literature on this subject several factors become evident.

A tuberculin reaction signifies in general only that the person has been infected at some time with tubercle bacilli.[1] Correlation of activity of the disease process with the severity of tuberculin reaction does not seem to be justified.

Furcolow and associates [2] found that 99.6 per cent of 468 tuberculous patients have skin reactions to PPD No. 2 or less and that no patients had complete anergy.

In the study by Lester and Atwell [3] the primary interest has been in the use of tuberculin as a diagnostic test. Although one realizes that skin reactions to low doses of tuberculin occur in patients ill with tuberculosis, in the group of 624 tuberculous patients a tuberculin skin reaction would not have been ob-

* Presented at the Seventh-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 5, 1959.

tained in 21.7 per cent of the patients had only first strength been used. Eight per cent, (50 patients), of the group would have been designated as non-reactors if second strength PPD had not been employed. It is interesting to know that of the 4 patients who were non-reactors to all concentrations of PPD and OT, all had overwhelming infection and were moribund at the time of admission to the hospital. All of the patients became reactors within two months after institution of antituberculosis drug therapy. Another important factor that must be considered in the tuberculin test is the stability of the tuberculin reaction.

Kunofsky and Katz [4] studied a group of patients who were tuberculin retested over a considerable period of time. It was found that the tuberculin reaction was quite unstable and often disappeared. One factor contributing to this was the degree of exposure of tuberculous infection. Tuberculin conversions tended to increase and reversions decrease with increase in exposure. It is also assumed that a positive tuberculin reaction does not usually occur under a six week's incubation period following initial exposure to tuberculosis.

One concludes from the studies of Palitz and Aronsohn [5] that the low level or absence of tuberculin allergy commonly observed in the aged is the manifestation of deficiency of antigenic stimulus rather than of abnormal immunologic and physiologic responsiveness.

The remark is often made that the potency of the various lots of purified protein derivative is variable and for this reason inconsistent results can be obtained. Studies performed by the Veterans Administration Hospitals in evaluating various lots of PPD No. 2 revealed that of all lots available, reliable and consistent results were observed in all cases. There is a form of PPD classified as PPD-S which is considered to be the most pure but is not yet commercially available.

In a study by Allen [6] et al, of a series of 1,295 consecutive hospital admissions the most common errors of skin testing were found to be: (1) the use of outdated material, (2) failure to refrigerate the material after mixing, (3) use of too dilute solutions, and (4) failure to inject material intradermally.

Other skin testing materials such as blastomycin, coccidioidin and histoplasmin are used routinely as a portion of a battery of skin tests applied on all patients with an undiagnosed pulmonary lesion. The reliability of these tests has been questioned by some authors; however, it is the consensus of most that these are of some definite value particularly when supported by positive serology and complement fixation tests in those patients whose skin tests are reported to be positive.

II. Sputum Examinations

It has been stressed by others that if tubercle bacilli are to be recovered, repeated and adequate sputum specimens must be collected after eliminating as many mouth organisms, yeast, and saprophytes as possible. The usual methods of concentration with 4 per cent sodium-hydroxide solution and culture with modification of Lowenstein's and Petragnani's media is commonly used in the further isolation of the acid fast bacilli. Buddings' egg yolk media is used in some laboratories with very successful results and faster growth of the tubercle bacilli; however we have had no experience with this media in our laboratory.

In the majority of cases no difficulty is experienced in isolating the tubercle bacilli from patients whose sputum had been reported positive for acid fast bacilli prior to admission. However, occasionally, one is unable to confirm such positive sputa and this is of particular importance when there are very minimal changes observed to be present in the chest x-ray. It is a known fact that in patients treated with the anti-tuberculosis drugs occasionally there may be adequate concentration of the drug in the sputum to interfere with the cultural growth of the tubercle bacilli. This is

not usually the case if the patient is treated a comparatively short period of time, such as seven to ten days prior to admission. Occasionally, the presence of pyorrhea causes the presence of other acid fast rods which may be seen on concentrate smear but are yet negative on culture. Sometimes one encounters a laboratory contaminant such as the hay bacillus or similar acid fast organisms which may be present within nonsterile water.

Gastric lavage is also employed in those individuals who are unable to raise sufficient amounts of sputum for bacteriological examination and it should be noted that a concentrate smear of this material is usually meaningless and in all cases no confirmatory diagnosis can be established bacteriologically until cultures have been reported from the lavage material.

Another valuable source of sputum is by means of bronchoscopy. In a study conducted by Laforet and Strieder [7] it was found that the sputum produced following bronchoscopy was a more fruitful source of positive bacteriological data than was the secretion aspirated at the time of bronchoscopy. It was also observed that the bacteriological negativity of both the bronchoscopic aspirate and post-bronchoscopy sputum proved of considerable prognostic import since such patients rarely became infectious during the period of subsequent observation in the hospital. This is considered of extreme importance inasmuch as bronchoscopy is very often used in establishment of a definite diagnosis of an unknown pulmonary disease process.

In studying the cultural characteristics of tubercle bacilli, one must consider the atypical acid fast bacilli which are occasionally isolated from the sputum. This cultural growth oftentimes take on the orange or yellow colorations rather than the usual cream-colored cultural growth of the normal tubercle bacillus and some will only grow in high carbon dioxide concentrations. One is also impressed by the fact that perhaps there has been change in the metabolism of the tubercle bacillus after the institution of chemotherapy. In some instances a prolonged incubation period beyond the usual six or eight weeks is necessary and one does occasionally observe that a sputum may be positive on concentrate smear then reported negative on culture and yet positive by guinea pig inoculation from the material of the original specimen.

It is a common practice to inoculate a guinea pig with all atypical cultural growths of AFB as well as any isolated positive culture on a patient whose sputum has been persistently negative on smear and culture for AFB. In other areas where greater facilities are available other animals such as white mice and hamsters have been used to demonstrate the development of a tuberculous infection in these animals when it was found to be absent in the guinea pig.

III. Pleural Effusion

In cases of pleural effusions, aspirations followed by smear, culture and guinea pig inoculation have continued to be the accepted procedure. During the past several years pleural biopsy has been more commonly practiced with several techniques being developed for obtaining this pathologic information about the diseased pleura.

The needle biopsy, using the Vim-Silverman needle, has the advantage of simplicity. It can be performed as a simplified surgical procedure, however, it is helpful if there is fluid present at the time of biopsy; tissue fragments obtained are small and occasionally multiple punctures must be made to obtain specimens for bacteriological examinations.

In a study by Hill et al [8] an attempt was made to analyze the tuberculous cases with regard to optimal time for biopsy but this was inconclusive, as diagnostic tissue was obtained as early as one month after the onset of pleurisy and as late as nine months, with no particular pattern of a positive result having been determined. It is emphasized

that the finding of a non-specific inflammation or non-inflammatory tissue cannot be used to exclude the presence of tuberculosis. However, this technique may be of value in occasionally establishing a diagnosis of neoplasm or non-tuberculous inflammatory disease which would aid considerably in the differential diagnosis.

IV. Scalene Node Biopsy

This procedure is commonly accepted in attempting to establish a definite diagnosis of an undiagnosed pulmonary lesion. In our experience this particular examination has been very productive in establishing a diagnosis of sarcoid. Others have used a needle biopsy of the node and do not feel that this procedure is as highly productive of positive results as in a scalene node biopsy. It should be noted that in a review by Scott [9] of 160 consecutive scalene node biopsies 87 per cent, or 13 of 15 cases, were reported positive nodes in cases diagnosed as Boeck's sarcoid. In silicosis the percentage of positive nodes was 57.5 per cent and in lymphomas 50 per cent. Carcinoma of the esophagus was 33 per cent and tuberculosis 14.3 per cent. In 64 cases of pulmonary carcinoma 15.6 per cent of the nodes examined were positive; whereas in bronchoscopy at biopsy positive diagnosis was in 34.4 per cent. Therefore, one concludes that the scalene lymph node biopsy is a valuable diagnostic adjunct; positive results will be more easily obtained in cases of hilar adenopathy or diffuse bilateral pulmonary infiltration.

It should be noted that positive findings in biopsy material must be interpreted along with the clinical findings and also that granulomatous lesions are not always sufficiently specific to resolve a doubtful diagnosis.

V. Lung Biopsy

This procedure is merely being mentioned for completeness of diagnostic work-up but is one that is being used with increased frequency particularly in cases of undiagnosed lesions of unknown etiology and particularly when the question of insurance compensation may develop. However one should not exclude other routine diagnostic procedures and go directly to lung biopsy as this does constitute a fairly formidable surgical procedure.

Case Reports

Case No. 1—E. L. Sarcoid. Admitted February 28, 1955. Negative sputum, negative tuberculin test, negative PPD#1 and PPD#2. Scalene Node positive for Boeck's sarcoid on March 15, 1955. Has been followed in this out-patient clinic to-date.

Case No. 2—M. L. For advanced pulmonary tuberculosis. Admitted November 18, 1957. PPD #1 positive, sputa negative. One sputum reported positive on smear November 21, 1957, and one organism seen which was negative on culture. Scalene node biopsy done was negative. Bronchogram revealed contraction of left upper lobe with saccular bronchiectasis. Lung biopsy performed and revealed evidence of pulmonary tuberculosis. One day after the performance of the lung biopsy positive culture of a specimen of May 6, 1958 was reported on July 30, 1958.

Case No. 3—A. W. Pulmonary Histoplasmosis. Admitted April 12, 1957. Negative sputum. PPD #2 positive and histoplasmin positive. Placed on anti-tuberculosis treatment April 15, 1957. Scalene node negative. On October 15, 1957, had left posterior segmental resection; grossly was compatible with fibrocaseous tuberculosis with cavitation. Cultures reported by pathologist October 15, 1957. Had left posterior segmental resection. Grossly specimen was compatible with fibrocaseous tuberculosis with cavitation. Culture reported by pathologist as positive for histoplasmin capsulatum. Patient discharged as a transfer to New Orleans Charity Hospital for treatment with amphotericin B.

Case No. 4—W. P. Moderately advanced pulmonary tuberculosis. Admitted September 13, 1951 with sputum positive for AFB. Left upper lobe resected on January 28, 1952. Discharged August 8, 1952, followed elsewhere. Re-admitted with bronchogenic carcinoma, expired on September 25, 1954. Cause of death: Bronchogenic carcinoma with cerebral metastasis, pulmonary edema, hypostatic pneumonia and moderately advanced pulmonary tuberculosis arrested.

Case No. 5—J. H. Pulmonary abscess. Admitted March 20, 1958. Sputa negative for AFB. PPD #2 positive. Placed on penicillin therapy. Bronchoscopy negative, Papanicolaou smears negative. Bacteriology of sputa: gram positive cocci rods. Discharged to private doctor on June 12, 1958.

Case No. 6—J. S. Pulmonary histoplasmosis. Admitted Ruston TB Hospital July 1955, discharged April 18, 1956. All sputa negative. Gastric smear positive but negative on culture. Readmission to Ruston in January 1958, because of unfavorable x-ray changes, all sputa negative. Transferred to Greenwell Springs on May 21, 1958. Sputa negative, PPD#2 positive, histoplasmin strongly positive. A serological histoplasmin test reported titer of 1 to 8 in yeast phase of complement fixation. Discharged September 11, 1958.

Case No. 7—P. S. Far advanced pulmonary tuberculosis. Long history of active pulmonary tuberculosis dating back to March 15, 1950. Resection contraindicated because of limited pulmonary function. Sputum negative for AFB on concentrate smear and culture since November 3, 1954 even though x-rays revealed extensive fibrocavitary disease in entire right lung.

Case No. 8—N. Pulmonary tuberculosis.

Case No. 9—H. B. Carcinoma of right lung. Possible tuberculosis, left lung.

Conclusion

In conclusion, a summary of the more common diagnostic procedures used in the differential diagnosis of pulmonary diseases has been included.

In addition, advantages and disadvantages of these procedures has been pointed out.

A series of cases each illustrating specific practical points in diagnosis is included.

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UNIVERSITY OF LOUISIANA CLINICAL INSTRUCTION

There is no great city in the world which can boast of an institution where the student sees every form of disease so unrestrictedly as in the Charity Hospital—where he can so familiarly look disease in the face. In Rome, Vienna, Paris, London, and other justly celebrated capitals famed for Medical Science and instruction, in Great Britain and in Continental Europe, the student, at a respectful distance, accompanies the Professor in his visits, listens to his speech, looks at the patients in bed arranged as tableaux. The Professor informs him of the condition of the pulse, the respiration, the temperature of the body, and of the signs and symptoms which occur during disease, and which the master observes. But the pupil cannot place his hand upon the patient; he cannot question him to satisfy his own mind; he is not permitted to speak aloud; and he is excluded from visiting patients except in the presence of his teachers.

In New Orleans the student can visit patients in the Charity Hospital from morning until night, and devote his talents and industry to the study of every disease in the wards. He can question and examine for himself.

New Orleans M. & S. J. 19:7 (July) 1866.

Preliminary Report on Librium,* A New Psychopharmacologic Agent

• Evaluation of a new drug which in early studies appears to be quite effective.

GENE L. USDIN, M. D.†
New Orleans

Introduction

THE advent of new psychopharmacologic drugs has produced dramatic changes in the practice of clinical psychiatry and has led to increased opportunities for further research in the field of cerebral function. The problem of the shortage of psychiatrists, together with the cost of psychiatric treatment, has been met to some extent by these drugs which have brought relief to many individuals who could not avail themselves of psychotherapy for financial reasons, distance from treatment centers, resistance to therapy because of pathological mental mechanisms or misguided notions concerning emotional or mental illness. Then, too, the efficacy of some of the more recent psychopharmacologic drugs has accented the interrelationship of the psyche and the soma and has made not only physicians but also laymen more aware of psychosomatic medicine. Pharmaceutical companies, stimulated by promising results, have directed increased research efforts to develop more effective drugs with fewer toxic or side effects. It is to be anticipated that pharmaceutical companies will continue to attempt to "leap-frog' each other in their effort to provide better means of dealing with man's tensions.

Psychiatrists in private practice are faced with a number of significant handicaps in evaluating drugs: they cannot accumulate the large number of cases readily available to the psychiatrist in institutional or public clinic practice. Secondly, private practice more frequently involves the urgent need to get the patient well as soon as possible; there is often greater pressure on the physician because of the patient's financial situation. Then, too, patients with whom drugs become one of the cardinal tools in the therapeutic process often have limited goals insofar as basic personality changes are concerned. Many individuals, threatened by the concept of insight psychotherapy, desire only this limited goal —prompt relief of symptoms. The psychiatrist in private practice has both the need and responsibility principally to aid the patient as quickly as possible. Because of the need to achieve an early response, studies using placebos or double blind technics are usually not feasible. Also, there is a real question whether or not the present vogue of double blind studies is being overdone.[1, 2] Even under ideal situations with numerous physicians prescribing drugs not known to them, the question of whether or not a double blind study can truly be "blind" is not fully answered.

A third problem in carrying out a scientifically designed drug study is that of securing laboratory tests as a check on toxic effects of medications. Physicians in academic and institutional positions can, as a rule, freely order electroencephalograms, liver function tests, hemograms, etc. Also, nonpaying patients are usually more willing to cooperate in tests that might not be fully necessary for their over-all treatment.

This paper concerns one of the newest

* Trade name for methaminodiazepoxide, Hoffmann-La Roche, Inc., Nutley, N. J.

† From the Departments of Psychiatry of Touro Infirmary and the Tulane School of Medicine, New Orleans.

drugs in the psychopharmacologic field, namely, Librium (methaminodiazepoxide) which has proved extremely effective in the author's private practice. Shortly after the first good results were observed, utilizing the confidence obtained, the author explained to patients that this was one of the newest drugs and that he had found it exceedingly effective. Many physicians can find much to criticize in this technic of evaluating a drug. It must be granted that it leaves a good deal to the physician's subjective judgment. Is the patient's improvement greater on this drug than if placebos, some other drug or no drug had been used? The author recognized the aforementioned limitations to a thoroughgoing appraisal of the drug under study.

Randall's studies [3] emphasized that Librium not only calms laboratory animals but exerts a taming action, converting wild monkeys into pets. He further reported that while Librium had the tranquilizing properties of chlorpromazine and reserpine, it lacked their autonomic blocking effects. Compared with meprobamate it was more potent as a muscle relaxant; its anticonvulsant effects were not associated with induction of hypnosis.

Published reports of clinical trials in internal medicine, dermatology, as well as in a variety of psychiatric disorders [4-6] have emphasized its alleviating effects especially in anxiety, tension, and depression accompanied by agitation. Especially encouraging have been the results reporting few and extremely mild side effects all of which were reversed by discontinuance of the drug or reduction in the dosage. According to the manufacturers of the drug, investigation by about 3,000 clinicians with 40,000 patients in the course of a year has revealed no case of jaundice, blood dyscrasia, hepatic pathology, hypotension, or other serious adverse reaction.

Materials and Methods

The author's experience with the use of Librium here reported is based on seven months' observations. A total of 80 patients (48 female and 32 male), ranging in age from 17 to 74 years comprised the study. The longest period that any patient was on the drug was six months. All, except 7 patients, who were followed in the Psychiatric Clinic of Touro Infirmary, were seen in private practice. Some of the patients were under psychotherapy prior to the initiation of the drug and have been continued in psychotherapy while on the medication. Others were seen for only two or three visits and were referred back to the family physician with suggestions. Many of the patients had been on other medications prior to the initiation of Librium, and 15 had been hospitalized at the time they first received the drug. A further difficulty affecting a more precise evaluation of improvement was the fact that many of the patients were continued in psychotherapy. Twelve patients, with some degree of depression being one of the symptoms, were receiving a monoamine oxidase inhibitor or amphetamine compound concurrently. This factor was not carefully correlated, but apparently the concurrent use of amphetamine or monoamine oxidase inhibitor compounds made no significant variation in results obtained.

Patients in this study presented a diversified list of symptoms, and overlapping symptomatology in different diagnostic categories constituted a problem. It was decided to group patients primarily by the predominant presenting symptoms rather than by basic psychopathologic entity. Many included under the psychoneurotic classification also had some psychophysiologic disorders. The major portion (46) fell into the diagnostic category of psychoneurosis, which included all types of neurotic symptoms, although phobic and anxiety reactions were predominant. Five of these 46 patients were believed to be pseudoneurotic schizophrenics although it is conceivable that another clinician might object to this diagnostic label when no overt or flagrant manifestation of psychotic ideation is present. Five of the psychoneu-

rotic patients exhibiting conversion reactions were involved in legal litigation wherein maintenance of their symptomatology could result in significant secondary gain.

The remaining 34 patients included senile anxiety states, sociopathic personality disturbances with anxiety, psychophysiologic reactions, depressive phase of manic depressive reactions, transient situational personality disorders, paranoid reactions with anxiety, and alcoholic intoxication. The classifications and results of treatment are shown in Table 1.

Criteria for improvement were: Either the drug produced so great a relief of symptoms that trial with another medication did not appear warranted, or else Librium produced greater relief of symptoms than any medication previously used. In some instances wherein Librium proved effective, it was temporarily replaced with another tranquilizer or psychosedative; if Librium seemed to produce the greatest improvement it was reinstituted.

Early in the study the starting dosage was 25 mg. three times daily, but later the initial dosage was usually 20 mg. three times a day. Occasionally this had to be increased to 75 mg. daily, but more frequently the dose was reduced to 30 mg. daily. Unlike one investigator [7] who found 5 mg. ineffective, this investigator found that 2 patients with anxiety symptoms were significantly aided by 5 mg. three times daily.

Results

The drug's most striking effect was the lessening of anxiety and tension. The onset of effect was often prompt, some patients reporting significant relief in thirty minutes.

Of the 46 patients who exhibited primarily psychoneurotic symptomatology, 36 showed improvement with Librium that was significant or superior to any other medication. Results in this as well as in other categories can be seen in Table 1. The percentage of response in the psychoneurotic group appears more significant when it is noted that only two of the 5 patients wherein legal litigation was pending concerning a possible neurosis showed significant improvement.

TABLE 1
RESULTS OBTAINED IN PATIENTS WITH LIBRIUM

Indication	Total	Number of patients improved	Unimproved
Psychoneurotic symptomatology (phobic, conversion, anxiety, depressive, dissociative, mixed, etc.)	46	36	10
Psychophysiologic disorder			
a. cardiovascular	1	1	
b. gastrointestinal	5	4	1
Transient situational personality disorder *	5	4	1
Sociopathic personality *	4	2	2
Narcotic addiction	1	1	
Alcoholic withdrawal	5	4 †	1
Paranoid personality *	5	2	3
Depressive phase of manic depressive psychosis	3		3
Toxic psychosis associated with burns	1	1 †	
Post-cerebrovascular disorder *	1	1	
Agitation in chronic brain syndrome (cerebral arteriosclerosis)	3	0	3
TOTALS	80	56	24
		70%	30%

* Anxiety was primary presenting symptom.

† Question arises as to whether other drugs together with good medical management and anticipated recuperative processes of body might have resulted in equal improvement.

The following case histories exemplify some of the good responses that appeared especially significant:

Case No. 1.—A thirty-four-old housewife who initially was started on 75 mg. daily because of depression and severe anxiety symptoms. What is significant about this particular case is that she had not responded initially to psychotherapy, but moderately to a course of electroshock therapy and had continued to be inaccessible to psychotherapy. With the initiation of Librium, there was a marked response, and the patient was discharged from the hospital within a week. She has been able to work well in psychotherapy and is being seen biweekly in office psychotherapy. A few weeks after she was discharged from the hospital, she did not take her medication for two days, and there was a mild to moderate exacerbation of her anxiety and depressive symptomatology. Subsequently it has been possible to reduce the dosage of Librium to less than half of the starting dosage. This patient has now been on the drug for six months. Because of the strides made in psychotherapy, it is anticipated that she will be able to discontinue the drug shortly.

Case No. 2.—A 42-year-old, out-of-state general practitioner who had been hospitalized on several occasions because of narcotic addiction. He reported that the adjunct of Librium provided him with the mildest withdrawal period that he had ever experienced.

Case No. 3.—A 46-year-old successful businessman who has had essential hypertension for the past ten to fifteen years. His hypertension has been labile, and psychogenic factors have been prominent. He also has a problem with alcoholism and falls into the diagnostic category of sociopathic personality. He is a tense individual, but with the initiation of Librium there was a marked reduction in his tension and his blood pressure dropped to normal level. He takes the entire gamut of antihypertensive drugs, but also was taking them prior to the drop in his blood pressure.

Case No. 4.—A 56-year-old laborer who was involved in personal injury litigation and was diagnosed as having a conversion type of psychoneurosis. Librium was initiated and he not only noted marked diminution in his general anxiety, but also a decrease in back and lower extremity pains. He did complain of sexual impotency for two weeks after initiating the drug. But as he continued Librium not only did his potency return, but also, the tension and pain remained markedly diminished.

Case No. 5.—This is a 17-year-old primigravida woman with a lifelong history of a dissociative phenomenon that bordered on depersonalization. Her mother reported that the delivery of the patient was difficult and her physician considered that the patient had a "mild" birth injury. The patient was extremely tense and anxious when first seen. With the initiation of Librium, not only was there a good response insofar as the anxiety and tension was concerned, but also the dissociative phenomenon ceased. An electroencephalogram on September 22, 1959 (prior to the initiation of Librium) was reported as abnormal. Asymmetries of frequency and amplitude and background delta and theta frequencies in the occipital regions were noted. A subsequent electroencephalogram on February 18, 1960 (after the patient had been on Librium for nearly 5 months) revealed a reduction in the amount of background delta and theta activity, better hemispheric symmetry, and generally better stability of frequency and amplitude in the occipital areas.

Side Effects

The most frequent side effect encountered with Librium was that of lethargy which included drowsiness and fatigue; this symptom was present in varying degrees in 15 of the 80 cases and was associated with ataxia in 3 cases. The drug apparently may have cumulative effects. Four patients who were on 75 mg. daily became markedly somnolent for twelve to eighteen hours on about the second or third day of medication. This was readily reversible with temporary discontinuance of the drug. Five patients had ataxia; two of them had experienced no improvement and, therefore, did not wish to continue the medication even at a reduced dosage; the other three were able to tolerate the drug in smaller doses, but in only one of the three was there a satisfactory response to the medication. Many of the patients reported increased appetite and weight gain. Four patients, who had nausea as one of many symptoms, reported relief of the nausea. On the other hand, two patients (one of whom was four months pregnant and had previously been troubled with nausea) complained of the onset of nausea. Two patients, both hospitalized and semi-ambulatory, became constipated. However, it is interesting that several patients noted improved bowel habits while using Librium. One man complained of impotency, but this disappeared after two weeks even though the drug was continued. (Refer to Table 2 regarding side effects.)

TABLE 2
SIDE EFFECTS

	Incidence	Comments
Drowsiness	15	It was possible to continue on a reduced dosage in the majority.
Ataxia	5	
Nausea	2	1 of these was pregnant and experienced nausea during the first 4 mos.
Constipation	2	Both patients were hospitalized and semiambulatory.
Impotence	1	For two weeks after initiating therapy.

Discussion

The series of cases in this study is small and the author makes no pretense of its being controlled. Likewise, the period during which Librium has been used is limited (seven months) so that final conclusion concerning its place in therapy is as yet not warranted. It is a drug that apparently has a relatively wide range of dosage insofar as efficacy is concerned. Accordingly, some investigators might use 30 mg. while more daring ones might use 75 mg. as their basic dosage.

Results at this time appear to be extremely encouraging; it seems to be the most effective drug yet encountered in the treatment of anxiety, tension and phobic reactions. The lessening of anxiety and tension appears to be Librium's cardinal use at this time. It often does this without clouding consciousness or impairing intellectual function. Because of the side effect of lethargy or drowsiness, the statement that the drug does not cloud consciousness or impair intellectual function is open to question. Possibly this is a disagreement in semantics, but does not drowsiness in significant degree also cloud consciousness and impair intelligence? It would seem that a more appropriate statement would be that in proper dosage the drug can most often produce a diminution of anxiety and agitation without the side effect of significant lethargy.

Preliminary results of Librium's applicability to psychosis and personality disorders are promising, and the results in pseudoneurotic schizophrenics have been surprisingly good.

In two cases significant improvement occurred early, but the drug appeared later to lose its effectiveness.

The problem of evaluating side effects in early studies with any drug is a most difficult one. Factors to be considered are the setting in which the drug is used, the specific personality of the patient, his information regarding the drug and its side effects, the attitude and explanation of the prescribing physician as well as many other factors. No serious adverse effects have been encountered with the use of Librium. Some investigators [4] noted a stimulating effect with the use of Librium, but the occurrence of a pathological degree of stimulation was not striking in this study. As with many patients who have anxiety, diminution of that anxiety or relief from tension may produce a feeling of well-being, ability to participate in outside activities and ability to relate more and better. The pain-pleasure principle of anxiety and tension (or rebound phenomenon) should be kept in mind in this regard.

Librium, like the other tranquilizers or psychosedatives, is a symptomatic drug. Relief of symptoms is sufficient in some patients, but physicians should bear in mind that Librium does not cure underlying personality conflicts. When effective, it may make the patient more accessible to effective psychotherapy.

Summary

Librium (methaminodiazepoxide) a new psychopharmacologic agent was evaluated in 80 patients with a diversified group of symptoms.

Anxiety, tension and agitation — the predominant symptoms—were relieved in 70 per cent of the patients who had either been totally or partially unresponsive to other tranquilizers or else had not

taken tranquilizers previously. No serious adverse or irreversible side effects were found.

Librium appears to be a most unusual drug and promises to be a valuable addition to the physician's chemotherapeutic aids. It must be borne in mind that what is helpful to one patient may exacerbate symptoms in another. With the numerous tranquilizers that have been developed in recent years, it behooves the physician to try different medications when one medication does not work. He should keep in mind that one drug, which has been effective in 80 to 90 per cent of a certain type of condition, may not help a specific patient; whereas a drug which has been effective in but 20 to 30 per cent of the same condition may be extremely effective. While Librium is an important addition, there is no reason to believe that it is the final pharmacologic agent in the treatment of emotional or mental illness.

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HISTORICAL NOTES

A tendency to the reproduction of the intellectual, moral and physical traits of parents is universally admitted, and it is almost as generally granted that inherited defects are exaggerated in the offspring of blood relations; moreover, recent investigations go to prove that consanguinity in marriage, as an original cause, is adequate to the production of all the natural malformations, infirmities, and vices to which the human organism is subject. It is a happy circumstance for our race that infecundity of parents and early death of their offspring often attend these unions.

As a result of close intermarriage among the nobility of France and Spain, writers at the close of the seventeenth century remarked: "In Spain, when a Grandee of that nation was announced in a saloon, they expected to see enter a sort of abortion." In France, it was said: "In regarding the mass of men composing the high nobility of the State, one seemed to be in a society of invalids."

Herrick, S. S.: Marriages of Consanguinity, New Orleans M. & S. J. 19:48 (July) 1866.

A Psychiatrist Looks at Medical Hypnosis*

• The author is convinced that hypnosis is more than just a fad. He believes that although its use is not without dangers, due to ignorance of the contraindications, hypnosis is an adjunctive treatment to be employed by general physicians and nonpsychiatric specialists after proper training.

RUSSELL R. MONROE, M. D.†
New Orleans

THERE are probably some six thousand physicians and at least an equal number of dentists now using hypnosis in their practices. Such sudden popularity of this old but until recently all-but-forgotten technique prompted the Council on Mental Health of the American Medical Association to issue a report on the medical use of hypnosis.[1] In substance, the Council report states that

" . . . there are definite and proper uses of hypnosis in medical and dental practice in the hands of those who are properly trained but that no physician or dentist should utilize hypnosis for purposes that are not related to his particular specialty and are beyond the range of his ordinary competence."

I would interpret this to mean that the physician's goals with hypnosis should be no more than he would attempt in the waking state while practicing his particular specialty. On the other hand, the Council points out that the training facilities for medical hypnosis are almost completely lacking. It also mentions that even experts disagree as to the possible dangers inherent in hypnosis.

Potential Dangers

It seems to the author axiomatic that any medicine or medical procedure that can be good for the patient might also be bad. Anyone who has observed the hypnotic trance is aware of the intense suggestibility and increased cooperation of the subject. Despite protests to the contrary, such increased cooperation might under certain circumstances be exploited by the unethical. A simple demonstration of this observed by the author was an Army sergeant hospitalized because of an acute anxiety reaction following long combat experience. He was an apt hypnotic subject, easily obtaining a deep, somnambulistic trance. With suggestion, he returned to the battlefield of some months before. It was then further suggested that the next person he saw would be an enemy soldier approaching with fixed bayonet. It took several men to restrain the subject from killing his imagined assailant, even though this assailant was a medical aide whom the patient knew quite well and would not think of attacking under other circumstances. This hypersuggestibility in itself is reason enough to discourage stage hypnosis or parlor games involving a hypnotic trance. Unfortunately, trance induction is such a simple technique that our only hope for control is to establish hypnosis as a medical procedure through education of the laity.

Apart from this, it is the author's contention that hypnosis, even in the hands of the sincere, ethical but untrained physician, is potentially dangerous. It seems to me that the psychiatrist must point out such dangers through publicizing his personal experiences and that medical educators must establish comprehensive post-graduate training in induction techniques, patient selection, and therapy with close clinical supervision.

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† Associate Professor of Psychiatry, Tulane University School of Medicine, New Orleans.

Case Reports

Below are some examples of what could have been serious complications following the inept use of hypnosis, as well as other case illustrations of proper patient selection and use of hypnotherapy. I hope this will offer some guides which will minimize the dangers of hypnosis, as well as establish principles for selecting patients and for determining the level of competency of physicians.

A twenty-five-year-old wife of an Army sergeant returned to her dentist following a tooth extraction with "lock jaw." The dentist put her into a moderately deep hypnotic trance and suggested that she could now open her mouth, which she did without effort. He then gave the post-hypnotic suggestion that, when she awakened, she would be able to move her jaw normally. When this proved to be true, she seemed elated and grateful. However, late that evening she was seen in the emergency room in a deep coma, following an overdose of barbiturates. When finally revived, she sobbingly related this story. Her husband, who had been overseas for several years, was to return the following week. She reluctantly admitted that during his absence she had been having an affair and was now two months pregnant. It is obvious that this girl's symptoms were a bid for help and that a more permissive suggestion of symptom removal or allowing the patient to talk about her problems might have avoided what could have been a fatal complication.

Another example is a thirty-five-year-old Army private who had been incarcerated for six months on a three-year sentence for AWOL. He was referred to the psychiatrist for a hysterical right hemiparesis and hemianesthesia. He was easily hypnotized; and, over a period of three sessions, both the hemiparesis and hemianesthesia disappeared under direct command. Despite the fact that he seemed grateful for his improvement, several days later he complained of acute claustrophobia. Again, a hypnotic state was induced; and, again, using a command technique, the claustrophobia disappeared. Some days later, the patient developed an acute panic reaction with a tachycardia and cardiac arrhythmia which necessitated hospitalization. Again, hypnosis with a command technique for relaxation was instituted. Although the present symptoms were much more resistant to hypnotic therapy, in time they too disappeared, only to be replaced by severe neurodermatitis. By this time, the patient's therapist had elicited information suggesting extenuating circumstances for his offense, which was later confirmed by further investigation. The patient received an extensive remission of his sentence with concurrent disappearance of his psychosomatic skin disorder.

This is an example where the command technique, without getting at the basic problem, elicited shifts in the defensive symtpoms—each one becoming more severe. Permanent symptom removal was only obtained by working out the patient's obvious situational problem.

A third example is that of an adolescent boy, hospitalized with amnesia. Under hypnosis, his memory returned and the precipitating conflict was identified. This turned out to be an impending operation for hypospadias, which was very frightening to this childish, schizoid individual with his many hypochondrical preoccupations. He remained in the hospital until after his operation, continuing to receive reassurance psychotherapy. Because he was such an exceptional hypnotic subject, he was used on a number of occasions as a subject for demonstrations to residents and students.

In the waking state, he had a complete amnesia for the hypnotic experience. In fact, he did not even realize that he had ever been hypnotized. Under hypnosis, the demonstrator would dramatize hypnotically-induced hallucinations by suggesting to the patient that upon a cue he would be able to see through all manner of cloth and clothing. The blushing and embarrassment of the patient as he looked at a mixed audience was dramatic evidence of the validity of such hallucinations. It time it become obvious that the afternoon following such demonstrations the patient would act out some impulse on the ward. He had only a superficial rationalization for these actions, which were quite out of character for this rather passive, ingratiating individual. When this was realized, the patient was questioned under hypnosis about his feelings regarding the hypnotic demonstrations. Although in the waking state he always protested that he did not mind being interviewed by the students, under hypnosis he suddenly expressed intense resentment, shouting, "Why do you always embarrass me under hypnosis?" Again, in the waking state immediately afterwards, he had no memory of this—in fact, denied again that he had ever been hypnotized. This emphasizes the need, even under the deepest hypnosis, to treat your patient with all the caution and respect you would in the waking state. It also illustrates the well known observation that the experiences one undergoes under hypnosis, even if not recalled afterward, do have a profound influence on subsequent behavior which might be self-destructive.

Another example of an adverse reaction to hypnosis is that of a twenty-nine-year-old white male who was being treated with hypnosis for the control of chronic pain. He had had a right upper lobectomy for tuberculosis which left a

persistent pain, even after a unilateral rhizotomy of T-4 to T-8.

Phychiatric evaluation revealed an individual with both paranoid and masochistic tendencies, with the possibility of an underlying psychosis which might be precipitated by coercively removing his pain. It was decided, therefore, to treat him cautiously, focusing as much on total adjustment as on mere symptom removal. Being seen three times a week in hypnotherapeutic sessions, the patient showed rather dramatic immediate improvement. He was less preoccupied with his pain, began to socialize more freely and even talked about going back to work. However, unbeknown to the treating physician, the patient was reading about and practicing induction techniques. It was ultimately discovered that in several weeks he had become an expert on induction technique. His seeming improvement was due to a typical grandiose paranoid repair, inasmuch as he now could control his wife and friends through hypnosis. The treating physician cautiously, but firmly insisted that he either discontinue these practices or it would be necessary for the physician to stop therapy.

The next time he was seen, he was depressed, withdrawn, complaining of his pain again, and carrying a gun in his pocket—allegedly to shoot himself but, with his paranoid trends, the treating physician was not sure whether it might not be his surgeon or the physician himself. The patient was immediately and willingly hospitalized. However, in the hospital he rapidly decompensated until he was openly expressing a number of paranoid delusions.

This is an instance of the hypnotherapy precipitating a grandiose repair, dangerous to everybody in the environment, in a basically paranoid schizophrenic. Two other somewhat similar cases leave the author with the impression that paranoids are either poor hypnotic subjects or utilize hypnosis, as this patient did, to manipulate and control their environment.

Hypnosis as a Medical Aid

Fortunately, in most of these patients the damage done by hypnosis was not irreparable, the ultimate outcome being a happy one; but those examples do reveal what might have been serious complications under less fortunate circumstances. I believe that such possible complications should not inhibit our use of hypnosis, for many times it can be of service to the medical profession, if used by properly trained physicians who have had some clinical training under the supervision of experienced hypnotherapists. In view of this, the author and a group of his colleagues in the Department of Psychiatry at Tulane attempted a pilot course in medical hypnosis as an elective for fourth-year medical students during the academic year 1958-59. The instructors, students, and casual observers were all impressed as to how useful hypnosis can be, particularly as an adjunct to other therapies. Some examples are as follows:

An elderly man was recuperating from surgery but suffering from intractable hiccups. He had to take all fluids by vein and was having a decidedly stormy postoperative course. One of the medical students, under supervision, was able to induce a fair degree of relaxation. The hiccups were temporarily relieved but subsequently recurred. The student returned and repeated this procedure again with success. He then taught the patient self-hypnosis. The patient was able to obtain a light hypnotic trance. In this way, the patient could subsequently relieve his own bouts of hiccups. This was most impressive to the skeptical surgeons, who had consulted psychiatry as a last resort after everything else had failed.

Another example was a middle-aged colored male who was having plastic repair of his face requiring a pedicle transplant from his abdomen, which meant that he had to hold one arm in an awkward position for a period of from four to six weeks. The patient was approached with the idea of using hypnosis to help him maintain the difficult posture required by the procedure. He enthusiastically accepted our suggestion, and one week prior to surgery he was induced by the method of progressive relaxation, being easily deepened to a medium trance with hand levitation. The suggestion was given that he would be able to hold his right hand to his forehead with little or no effort. Posthypnotic suggestion was given by the use of his other arm, which—at the suggestion of the hypnotist—was stuck to his forehead. Neither the patient nor others could remove the arm from this position until he had been given the appropriate cue.

After the procedure, the patient was seen daily under hypnosis, and the suggestion of maintaining arm position without conscious effort was reinforced. If more than twenty-four hours elapsed between hypnotic sessions, the patient would complain of fatigue, tiredness, and aching of muscles. Immediately following the hypnotic suggestion, there was relaxation with relief of discomfort. When the pedicle was detached five weeks later and the signal given for the patient to lower his arm, he did so with some limitation of motion and tenderness in the joints, which rapidly disappeared under continued hypnotic suggestion and exercise.

Another patient was referred to the psychiatrist for trance induction in the hope that she might undergo a complete dental extraction without the use of drugs. She was allergic to narcotics, barbiturates, and analgesics. As she could obtain only a light to medium trance, it was suggested that the operation be done under nitrous oxide but that the hypnotherapist be utilized for presurgical and postsurgical care. The patient was seen the evening before the operation, with the induction of relaxation and sleep. The morning of the operation, instead of the usual pre-anesthetic medication, relaxation and drowsiness were induced. Following the operation, for the first twenty-four hours, relaxation and relief of pain were again suggested directly under hypnosis. This was sufficient to insure a smooth preoperative and postoperative course in a woman who was extremely anxious about the procedure.

Another patient was a sixty-four-year-old white female who had the terminal phalanx of the left thumb removed after a diagnosis of malignant melanoma. She had had a perfusion of the upper extremity with a nitrogen mustard compound. At the time of her referral, she was confined to her room because of severe pain throughout the left arm, accentuated in the amputated stump.

This patient went into a deep trance during the first session and reported no pain during the trance state. She subsequently reported an increase of six to eight hours' sleep in the following twenty-four-hour period. The pain was changed considerably during the next two sessions, with localization to the thumb and forearm. It was also suggested that she might feel well enough to go out of her room. Her first reaction was to reject this suggestion; but, after the sixth hypnotic session, therapy was discontinued because the patient reported only minor, intermittent discomfort located in her thumb. She was no longer confined to her room and now socialized freely.

The patients and procedures described above illustrate situations in which most physicians could utilize hypnosis as an adjunctive form of therapy with only minimal training in psychological medicine—that is, as much as is usually obtained in the undergraduate medical curriculum. In these instances, the goal was either relaxation, increased cooperation during medical procedures, alleviation of acute but specific real anxiety or the control of pain. The experience we had with these patients were most rewarding, particularly the ready acceptance of hypnosis by the other specialists—for instance, the surgeons, anesthesiologists, and dentists. It was our feeling that this also enhanced their sympathy for and understanding of psychological medicine.

Another patient requiring skin grafts, presented a similar problem to the one above. An attempt was made to induce hypnosis in this patient with a total lack of success. The surgeons questioned us as to why we could do this with one patient and not with another. We sat down with them and pointed out that this particular man had gone through a period of ten years of recurrent hospitalization for osteomyelitis. There had been many years of medical mismanagement. He had been shuttled from one doctor to another and now was so suspicious of all physicians that he could not trust us or anybody else without at least more prolonged contact. The surgeons readily understood this and could thereby see the hypnotic state as a manifestation of the doctor-patient relationship wherein the patient must have complete trust in his physician.

Inadequacy of Hypnosis

There is another group of patients who superficially appear similar to the above, but it soon becomes obvious that these patients need more than hypnosis. They require support, superficial guidance, or extensive rehabilitative planning as well.

A fifty-five-year-old colored female was referred for hypnosis because of a blood pressure of 215/100. There was a grade-3 systolic murmur at the apex of the heart. EKG, chest films, and other laboratory and physical findings were all within normal limits. When seen by the hypnotherapist, her blood pressure was only 150/90. In the first hypnotic session, during which she obtained a light trance, the pressure was 120/76. In the waking state, the patient was very anxious, wringing her hands before and after the hypnosis. Again, on her second visit, her blood pressure was elevated; and, after ten minutes of talking with the hypnotist without trance induction, the patient's blood pressure had returned to the normal range, although it fell a little more under hypnosis. While under hypnosis, the patient was told that she could easily control her blood pressure by relaxing but that her tension must reflect some problem. She immediately be-

gan talking about her husband's recent death and how she was now afraid of house-breakers and crowds, believing that someone wished to harm her. She spontaneously decided that all of these things must be increasing her blood pressure. Incipient psychosis was suspected; therefore, she was referred for brief psychotherapy, being seen once a week without hypnosis. There was no further observed elevation of her blood pressure.

Another example of this is a nine-year-old white male who was referred for hypnosis because of enuresis since the age of two-and-a-half. The patient appeared to be a rather small boy, extremely nervous and shy. He was imaginative and a very good hypnotic subject. It was suggested under hypnosis that he would relive the experience of wetting the bed in the therapist's office—that is, he would become very uncomfortable from a full bladder but would be able to awaken himself and go to the bathroom. He did this on each occasion. It was then suggested post-hypnotically that he would be able to do this at home.

After several sessions, he would go a week at a time without wetting the bed. However, it was learned that his family was extremely displeased with his bed-wetting and punished him rather severely by attempting to shame him into correcting this habit—for instance, insisting that he wear diapers at night. Probably more significant than the hypnosis itself were several counselling sessions with the family regarding the patient's difficulties and suggestions of better ways of handling his enuresis. It seems to me that the general physician or nonpsychiatric specialist could handle such problems as these after some post-graduate training in psychological medicine.

Again, there are patients whose problems are so complicated that they tax the ingenuity of even the most highly trained dynamic psychiatrists, although on the surface they might seem to be ideal candidates for medical hypnosis.

An example of this is a thirty-five-year-old single woman who holds a very responsible position as a departmental manager in an advertising agency. She had decided to use contact lenses but found that she could not tolerate them for more than a few minutes. It was hoped that hypnosis might increase her tolerance. She proved to be a good hypnotic subject, obtaining a moderate trance state. Practicing under hypnosis, she could insert and remove her lenses without difficulty and could tolerate them without irritation. Using post-hypnotic suggestion, she wore these for from ten to twelve hours each day and on weekends almost continuously. However, without continuous hypnotic reinforcement, she would immediately relapse, not wearing her contact lenses, particularly to the office.

She was finally seen in consultation by a psychiatrist, who after talking with her suspected that there was an underlying need for the patient to hang on to her frames. He also discovered that she was receiving psychotherapy. With her permission, he contacted her therapist, who confirmed the impression by reporting that she had rather deep-seated conflicts in terms of her own sexual identity and, for the time-being, needed her ordinary glasses to protect her from being the "sexual" woman.

Discussion

It is my observation that the attitude among the medical profession towards hypnosis is still an intensely emotional one. Some zealous advocates seem addicted. They repeatedly enroll in seminar courses, enjoy self-hypnosis, and are obviously looking for a quick solution for personal problems. Others become involved with a magical sense of omnipotence because of imagined supernatural power. At the opposite extreme are those who reject hypnosis as dangerous, although—upon questioning—admit that they have never seen an adverse reaction nor have they bothered to review literature. Some even reject hypnosis not only as a valid medical technique but as a scientifically proven psychological phenomenon. More timid colleagues who have had some training in hypnosis are sometimes reluctant to use it for fear of ridicule from their peers. More rarely the other extreme occurs. I know of one Louisiana community where all obstetricians use hypnosis—several under duress—in order to be competitive with their colleagues. In other words, the demands of their patients forced them to learn this technique.

The easiest way to dismiss hypnosis is to say that it is a fad which has occurred periodically since the time of Mesmer. This is a favorite comment of psychiatrists, but it seems to me that there are several factors which make the present interest in hypnosis more than just a fad. There is more acceptance of hypnosis both by the medical profession and laity. There is considerably more

psychodynamic understanding of what hypnosis is than was true in the past. Most important of all, the usefulness of lighter stages of hypnosis is now recognized. It is realized that one need not obtain the deep hypnotic trance or somnambulistic state previously thought desirable. Since so few patients could obtain this deep trance, physicians often became discouraged with what they considered to be their own failure or the limited suggestibility of their patients. It is now claimed that 80 to 90 per cent of the population can obtain at least a light hypnotic state, which is sufficiently deep for most medical purposes.[2] This may seem surprisingly high to the psychiatrist, who is generally working with patients notoriously resistant to hypnosis and whose goals are usually far more complex than those of the general physician. For these reasons, I suspect that the psychiatrist will find hypnosis much less useful in his practice than will the non-psychiatric physician.

It is also recognized that hypnosis is usually a therapeutic adjunct, not definitive therapy. For instance, the value of hypnosis for the anesthesiologist would be quite limited if one had to rely on hypnosis alone for major operative procedures. However, a large percentage of his patients might benefit from light stages of relaxation, concentration and sleep, both preoperatively and postoperatively. The physician's goal for hypnosis then should be a consistently obtainable, although limited and undramatic improvement of the patient's symptoms or an increase in his cooperation.

Apparently my attitude is not a true reflection of the attitudes among psychiatrists in this community. A questionnaire was sent to 118 members of the New Orleans Society of Neurology and Psychiatry. Eighty-five physicians replied. Only 2 of the 85 expressed the idea that hypnosis was not a valid medical procedure. These two physicians felt that it still was in the "experimental" stage. However, over half of the doctors felt that hypnosis should be limited to psychiatrists; and those who believed other physicians could make use of it felt that this should be limited to obtaining muscular relaxation, increased cooperation for medical procedures, or control of pain. This would suggest that the psychiatrists are much more concerned about the complications of hypnosis than is the medical profession, in general.[3, 4] In fact, only three psychiatrists in this community indicated that the nonpsychiatrists should treat patients for symptomatic habits—such as nail-biting, excessive smoking, obesity, or use it for its cathartic effect, or depend on hypnosis for facilitating insight.

To me, this is somewhat surprising, in view of the small number of psychiatrists who have observed deleterious effects from hypnosis. For example, eleven doctors reported 13 instances in which they had observed complications directly related to hypnosis. In four of these instances, experiences with parlor or stage hypnosis were responsible. In 2 other instances, the acute sequelae resulted from hypnotic therapy done by psychiatrists, in one instance, by a dentist, and, in the remainder, by general physicians or specialists. The most serious complication reported was a successful suicide. In this and in one other instance, the complication resulted from command symptom removal, which certainly could have been avoided if the treating physicians had the most rudimentary knowledge of proper hypnotic technique. In 6 other instances, acute psychotic reactions resulted, although it was reported that these were severely predisposed individuals. The other instances were not serious complications but minor depressions, anxieties, dependencies, or erotic attachments to the hypnotherapists, which occur in any doctor-patient setting.

When one considers that at least 100 local physicians and dentists are using hypnosis in their practices, it would seem that the complications are relatively infrequent and that these complications

could have been avoided if the individual had had proper training in the use of a permissive technique or was able to recognize early psychosis. To me, this emphasizes the need for establishing training programs in medical hypnosis with continued clinical supervision and suggests that the psychiatrist must take an active lead in establishing and staffing such training programs.

From my own observations, working with two students on a research project on the hypnotic control of intractable pain due to cancer, it seemed that the effective element was the intense doctor-patient relationship rather than the depth of hypnosis. Some patients would get dramatic relief with the very light stages of hypnosis, while others obtained no relief, even if they could obtain a somnambulistic trance. It seems that understanding the doctor-patient relationship is crucial for the effective use of hypnosis in the control of this pain. Again, this would emphasize the important role the psychiatrist must play in the teaching of medical hypnosis.

One other advantage I foresee from my experience with the experimental course in medical hypnosis already alluded to is that such teaching provides increased rapport between the psychiatrists and other specialists. We have an opportunity to sit down and talk with these specialists about the character structure of the patient and the dynamics of the doctor-patient relationship. The specialists are willing to do this because hypnotic therapy offers an immediate, palpable aid to them in the care of their patients. The psychiatrist becomes more than just a dumping ground for uncooperative or psychotic patients.

It must be clear by now that I think the psychiatrists should be less reluctant in encouraging medical hypnosis and more aware of the possible dangers if we do not actively participate in teaching general physicians and nonpsychiatric specialists the indications and contraindications of hypnotherapy, while emphasizing that it is an adjunctive treatment within their fields of competence.

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HISTORICAL NOTES

In all ages of the world the conquerors and leaders in civilization have been nations of mixed blood. Unquestionably the most aggressive and progressive race now existing is the mixed race known as the Anglo-Saxon. The people of these states, not yet brought to a condition of fusion, and therefore not yet having acquired a distinct national character, which belongs only to a homogeneous people have, in various ways and on various occasions, asserted their progressive tendencies, and have a religious faith in that most aggressive of all doctrines, "Manifest Destiny."

Herrick, S.S.: Marriage of Consanguinity, New Orleans M. & S. J. 19:50 (July) 1866.

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Editorial

Socialized Medicine in Europe

Creeping socialism continues to threaten this country. As a part of the socialist program, socialized medicine, or state medicine, or compulsory health insurance, or compulsory sickness insurance, all meaning the same thing, have been repeatedly presented to Congress. After a succession of failures to have the whole plan accepted by the nation, small increments of the plan have been presented and enacted, in spite of the informative and forceful opposition of organized medicine.

One such plan is presently before the Congress, known as the Forand bill (HR 4700). Opposition to this bill on the part of the nation's physicians has become widespread and gives the prospect of being effective. Those who advocate the bill have pointed to the success—so-called—of socialized medicine in various forms in Europe.

Although there are many institutions, laws, and customs which are acceptable there, and apparently satisfactory in various countries, it is by no means to be assumed that the same would be desirable or acceptable here. In the last several years there has been a reported threat of the socialized Austrian, German, French, and British doctors to go on strike. It is further stated that the Italian physicians actually did strike. This could be interpreted as an indication that at least from the monetary standpoint socialized medicine in the several countries mentioned is not entirely satisfactory economically.

In England, a modified form of socialized medicine began a half century ago and came into full expression in 1948. The result, as indicated by numerous reports and surveys, has been one which makes proper appraisal difficult. It is agreed that the cost the first year was two and a half times the original estimate, and is now about six times the estimate. The startling increase is partly the result of inflation, but principally, because of greater demands upon the use of the National Health Service than were anticipated. Observers report that although no increase in the hospital beds has been provided and that while emergencies are cared for in the hospitals, elective cases may wait months or two years before admission. Physicians in their offices must see fifty to one hundred patients a day; the allotment of time to

each may be as little as three minutes. A large part of the time of the general practitioner is consumed as a distributor of patients, directing them to special services, specialists in hospitals, and consideration of trivialities. The general practitioner loses contact with the patient during the time he is under the care of the specialist consultant or in the hospital.

The physicians practice under certain limitations and the State, after consultations with appropriate committees, reserves the right to direct the physician in various fields. The general practitioners are paid a fixed capitation fee per patient per year. Since 1952, the maximum number of patients a family doctor in Britain can carry on his panel is 3500, for which he receives an average of $2.73 per patient a year. Specialists are attached to hospitals and paid a salary. Various observers have stated that if the quality of service has not greatly deteriorated as yet it is because the years of strain and stress which have passed could not change the standards of the profession.

Government medicine in France follows a different pattern. Hospitalization is provided in government hospitals, and most of the hospitals in France are of that type. Physicians are paid by the patient on a fee for service basis. The government provides 80 per cent of the cost of prescriptions and 80 per cent of an established fee schedule for physicians and dentists. The physicians have refused to accept a fee schedule, and the physician's fee may be more than the government schedule. A patient can secure from the government only 80 per cent of the fee allowed by the government. The onus of the difference of what is allowed and what is charged falls on the physician, and may prejudice the patient against him.

Rigid control of the price of drugs and of the cost of hospital administration has a restrictive effect on activities in their respective fields. It is stated that public hospitals in France are inadequately staffed, and by American standards give a meagre type of care.

In Germany, in 1875, Bismarck established a government insurance company to take care of low paid working classes and their families. At present, 86 per cent of the population are members of this government insurance company. Approximately 10 per cent are privately insured, and 4 per cent are not insured at all. An individual under this system needing medical care gets a sick slip from his employer, takes it to a physician of his choice, and the physician has the obligation, if he is on the accepted list of the government insurance company, of caring for this patient for three months for $3.50. In the event that hospitalization becomes necessary a certificate is furnished the patient and he finds his own way of acceptance into one of the government hospitals. It is commented that this system in its operation brings about a deterioration in morale of patients, who look upon the physician as an employee and he is regarded, for practical purposes, as being under the direction of the insurance company. The physician is a harrassed man and is under the necessity of making free house calls and seeing crowds of patients daily. He practices under directives as to the type of medication to be used, the number of tests which can be ordered, and is subject to deductions from his stipend for minor infractions of rules.

These systems of socialized medicine have grown up over a matter of decades. The undesirable features observed in their operation are not there by chance. They all alter radically the patient-physician relationship. They supply a great quantity of medical service to the mass of the people. The physician has the obligation to supply an unlimited service for a limited compensation. The expected result is that the quality of service will progressively deteriorate. The evidence indicates that this is slowly occurring. The fact that it has not progressed rapidly is greatly to the credit of the professional standards in the areas discussed.

It is the considered opinion of the physicians in this country that socialized medicine, as it operates in Europe, would be unsatisfactory here.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.



W. ROBYN HARDY, M. D.
President
1959 - 1960

Dr. W. Robyn Hardy, our President for the past year, has been quite active in attending district and parish society meetings and has always given these groups good wholesome advice and has created good fellowship among their members. He has, at all times, had the interest of the Society and its members uppermost in his mind and his actions and decisions were always in the best interest of Organized Medicine.

Dr. Hardy has participated in many national conferences and AMA meetings and has been active in creating good public relations in all places visited.

Dr. W. Robyn Hardy was born in Pineapple, Alabama in 1899.

He received his early education in the Alabama public school system and attended the University of Alabama where he was a member of the Student Army Training Corps during World War I.

Dr. Hardy was married in 1923 to Miss Louise Shehee of Union Springs, Alabama. One child was born to this union, Dr. W. Robyn Hardy, Jr., who is a practicing physician in New Orleans specializing in Radiology.

He received his Bachelor of Science degree from Tulane University and was graduated from the Tulane University School of Medicine in 1929.

His internship was performed at Southern Baptist Hospital in New Orleans.

Dr. Hardy has practiced in New Orleans throughout his professional career in medicine and surgery.

During World War II, he was assigned to the 45th Evacuation Hospital of the First Army and held the rank of Lieutenant colonel in the Army Medical Corps.

He is a member of the staff of Southern Baptist Hospital and is also past president and past chairman of the executive committee of that hospital.

He is senior visiting surgeon at Charity Hospital of Louisiana in New Orleans.

Dr. Hardy is a member of the Orleans Parish Medical Society, the Louisiana State Medical Society, the American Medical Association, the American College of Surgeons, the American Board of Abdominal Surgery, the Surgical Association of Louisiana and Alpha Omega Alpha honorary medical fraternity.

We heartily congratulate Dr. Hardy in conducting the affairs of the Society in a most efficient manner and sincerely thank him for his loyal services to the Society.

ANNUAL MEETING
CAPITOL HOUSE, BATON ROUGE
MAY 2-4, 1960

The opening session of the Society's 80th annual meeting will be held at 8 p.m. in the Civic, University, and Industrial Rooms of the Capitol House on Monday, May 2. The guest speaker of the evening will be Dr. F. J. L. Blasingame, Chicago, Executive Vice-President of the AMA who will speak on "American Medicine—Today and Tomorrow." At the opening meeting, doctors who have completed 50 years of practice will be given special recognition and admitted to the "50-Year Doctors Club."

Registration for the House of Delegates will begin at 8 a.m. on Monday, May 2, in the Grand Ballroom. The first session of the House will be at 9 a.m. in the Civic Room followed by a luncheon in the University and Industrial Rooms. Delegates will meet again at 2 p.m. in the Civic Room. The final meeting of the House of Delegates will be held at 9:30 a.m. on May 4 in the Industrial Room.

In addition to Dr. Blasingame, guest speakers will be Dr. Temple Ainsworth, Jackson, Miss., Professor of Urology, University of Mississippi Medical School; Dr. George L. Jordan, Houston, Tex., Chief of the Surgical Service of the Veterans Administration Hospital; Dr. Robert D. Moreton, Fort Worth, Tex., member of the executive committee of the American College of Radiology, and Dr. John H. Moyer, Philadelphia, Pa., Chairman of the Department of Internal Medicine, Hahnemann Medical College and Hospital.

Information regarding meeting places of the scientific sessions will be found in the program. All meeting rooms are on the ground floor of the Capitol House.

Scientific and technical exhibits will be in the Grand Ballroom. Members are urged to visit these exhibits as often as possible and to register with the technical exhibitors. The Society would not be able to conduct its annual meetings without the financial assistance it receives from the technical exhibitors. To show appreciation for this assistance, please register with each exhibitor.

The dinner dance will be held in the Grand Ballroom at 8:30 p.m. on Wednesday, May 4. Active members of the Society are entitled to two tickets for the dinner dance. Additional tickets for guests may be purchased at the registration desk.

The Annual State Medical Society Golf Tournament will be held on May 2 and 3 at the Sherwood Forest Country Club. All doctors interested in playing are asked to bring a certified handicap from their home Professional. Each entrant will be responsible for his daily caddy and green fee. Prizes will be presented at the conclusion of the tournament.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE 109TH ANNUAL A.M.A. MEETING: A FORUM FOR 2,000 TOP MEDICAL MEN

The 109th annual meeting of the American Medical Association will be a forum presented by some of the nation's top scientific brains.

Approximately 2,000 physicians, all outstanding in their field, will participate in presenting the scientific program of the meeting to be held in Miami Beach, June 13-17.

There will be two general scientific meetings in the Grand Ballroom of the Fontainebleau Hotel, and other lectures, symposiums, and panel discussions in the Fontainebleau, Eden Roc Hotel, and in the new, airconditioned Miami Beach Exhibition Hall. Sessions on dermatology, being held jointly with the Society for Investigative

Dermatology, will be in the di Lido Hotel.

The opening general scientific meeting, Monday afternoon, June 13, will begin with the Joseph Goldberger Lecture on Clinical Nutrition. Dr. Carl A. Lincke, chairman of the A.M.A. Council on Scientific Assembly, will preside at this meeting.

About 290 exhibits will be on display in the Miami Beach Exhibition Hall, representing the most outstanding exhibits selected from 540 applications.

A new special exhibit on Body Fluid Disturbances, offering a complete course in body fluids, will be presented in its entirety on two days. Different aspects will begin at specific times to permit physicians to attend only those parts in which they are particularly interested.

A special exhibit on fractures will include booths on fractures of the ankle, hip, wrist, tibia and fibula, children's fractures, and fractures resulting from falls on the outstretched hand. About 50 prominent orthopedic surgeons will take part in the demonstrations ot this exhibit.

Specials on Pulmonary Function and Fresh Tissue Pathology also will be highlighted in the Scientific Exhibition area.

An outstanding program of motion pictures and television, which will be coordinated with the rest of the scientific program, will be presented also in Miami Beach Exhibition Hall.

MEMORIAL MASS

A memorial mass for deceased members of the Society will be offered Tuesday evening, May 3, at 5:30 P.M. at St. Joseph's Catholic Church, corner of Fourth and Main Streets, Baton Rouge. All members and their families are cordially invited to attend. This service honoring our departed colleagues is sponsored by the Louisiana Federation of Catholic Physicians' Guilds.

REVIEWS OF MEDICAL MOTION PICTURES

The 11th annual publication of REVIEWS OF MEDICAL MOTION PICTURES is now available on request from the Film Library of the A.M.A. This publication is prepared by the Division of Communications, Department of Medical Motion Pictures and Television and contains reprints of all reviews published in the Journal A.M.A. during 1959.

COURSE IN FITTING CONTACT LENSES

The University of Texas Postgraduate School of Medicine announces a course in theory and practical fitting of contact lenses, to be held in Houston, Texas on May 23, 24, 25 and 26, 1960.

The instructors for this course will be ophthalmologists who are experienced in the fitting of contact lenses. This course is designed so that those completing it will be proficient in all phases of contact lens fitting and adjusting. The course is limited to 20 physicians certified by the American Board of Ophthalmology.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part 1, and requests for re-examination in Part 11 are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline for receipt of applications is August 1, 1960. No applications can be accepted after that date.

Candidates are requested to write to the office of the Secretary, 2105 Adelbert Road, Cleveland 6, Ohio, for a current Bulletin if they have not done so in order that they might be well informed as to the present requirements. Application fee ($35.00), photographs, and lists of hospital admissions must accompany all applications.

As announced in the current Bulletin, "after July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to examination. After the above date, training by Preceptorship will no longer be acceptable. Therefore the initiation of Preceptorships will not be approved after July 1, 1960."

NATIONAL CONFERENCE ON RURAL HEALTH OF THE AMERICAN MEDICAL ASSOCIATION

This Conference represents an era which actually started with the first conference which was held in Chicago in 1946. Mrs. Charles Sewell, with the cooperation of Dr. F. S. Crockett, both of Indiana, had asked the Board of Trustees of the American Medical Association in 1945 to help in solving some of the health problems of rural people.

The Louisiana State Medical Society, through its Rural and Urban Health Committee, was represented by three of its members at that first meeting in the Palmer House in Chicago in February 1946 and has continued active in subsequent conferences. Dr. M. C. Wiginton of Hammond, Louisiana, who lost his life in a drowning accident in Florida on November 25, 1959, attended thirteen of the conferences. Dr. Guy R. Jones of Lockport, the original Chairman and now Vice-Chairman of the Committee on Rural and Urban Health, attended a total of twelve meetings. The Chairman has attended all except two meetings.

At the last meeting of the Rural Health Council of the American Medical Association, it was

agreed that the Council had served its objective, and that national meetings should be replaced with regional meetings. In 1961 there will be two regional meetings—one in Atlanta and the other in Denver.

The theme of this, the 15th National Conference, was: "Meeting Challenges with responsibility." It covered such general areas as "Choosing A Career in the Field of Medicine"—Medicine, Dentistry, Nursing, Medical Technology, Veterinary Medicine, and others. The effect of diet and nutrition on health, what is good growth, and the age-old subject of our aging population, were also subjects of discussion.

While the attendance was not up to par, the people were enthusiastic as ever, and everyone agreed that we wanted no more of Socialized Medicine, not even the Forand Bill.

J. P. Sanders, M. D., Chairman
Committee on Rural and Urban Health
Louisiana State Medical Society

BOOK REVIEWS

Synopsis of Gastroenterology; by Rudolph Schinder, M. D. New York, 1957, Grune & Stratton, pp. 395, Price $7.75.

This book attempts to correlate gastrointestinal lesions with symptoms connected with other organ systems and discusses the general etiology and symptomatology of gastrointestinal disorders. It includes some very basic material on gastrointestinal examination particularly with respect to diseases of the mouth, pharynx, salivary glands, esophagus, stomach and duodenum, in addition to other lesions of the solid and hollow viscera of the abdominal cavity. This treatise makes good reading for ready reference.

CHARLES C. ABBOTT, M. D.

A History of Neurology; by Walter Riese, MD Publications, New York, 1959.

Riese's *History of Neurology* is a fascinating idea sadly come to grief. The author has hit on the intriguing scheme of depicting the development of neurology throughout Western history by tracing the evolution of some of its major concepts (nervous impulse, reflex action, cerebral localization, etc.). Unfortunately, the execution is so turgid, so weighted down with reference after reference poorly strung together, that one has a terrible time following the author's stream of thought and tends to be frustatingly at sea by the end of each chapter. The book ends with a very nice chronological table of prominent neurologists and their contributions set against the historical background in which they lived.

GERHARD HERMANN FROMM, M. D.

The Principles and Methods of Physical Diagnosis; by Simon S. Leopold, M. D., 2d ed., Philadelphia, Pa., W. B. Saunders Company, 1957, 537 pp., Price $9.00.

The author's aim is to provide a textbook which stresses the underlying principles of physical examination and the correlation of abnormal findings with disease processes. The book is designed as a supplement to clinical instruction and will be of primary interest to the undergraduate medical student and his teachers. There are chapters on history taking, psychiatric evaluation, collection of general data, and the pediatric examination. The other chapters survey the various parts of the body with a description of methods of examination, definition of appropriate terminology and correlation with pathological conditions. There are included helpful clinical hints for facilitating diagnosis, such as four ways to palpate a spleen, and timing of living pulsations. Leopold includes material from other sources as well as his own experience and several chapters are written by guest authors (gynecology, neurology, etc.). There is a special chapter on acoustic principles in chest auscultation by S. Reid Warren.

This second edition differs from the first primarily in the greater emphasis given history taking and in expansion of the material generally, including a chapter on pediatric examination.

JEANNE HORAN, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: A Traveler's Guide to Good Health, by Colter Rule, M. D.

Grune & Stratton, Inc., N. Y.: Cardiac Auscultation, by J. Scott Butterworth, M. D., Maurice R. Chassin, M. D., Robert McGrath, M. D., and Edmund H. Reppert, M. D. (2nd edit.).

Office of the Surgeon General, Department of the Army, Washington, D. C.: Surgery in World War II, Neurosurgery, Volume II, by R. Glen Spurling, M. D., and Barnes Woodhall, M. D.

W. B. Saunders Co., Phila.: Anatomy, by Ernest Gardner, M. D., Donald J. Gray, Ph. D., and Ronan O'Rahilly, M. Sc., M. D.

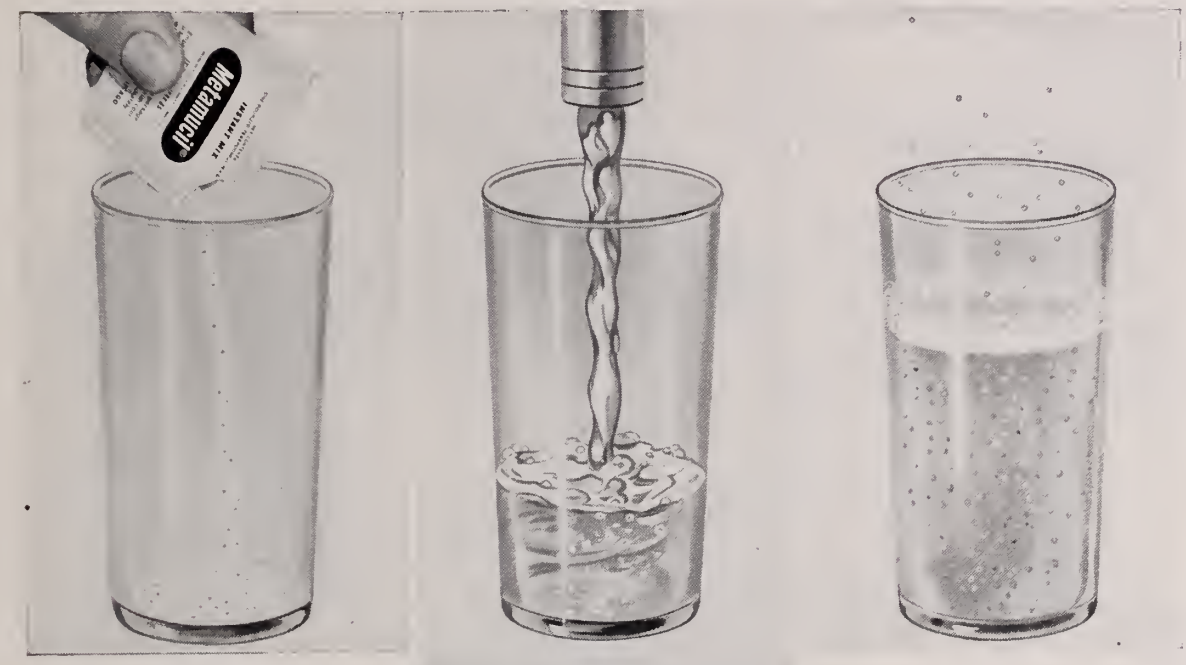
Charles C Thomas, Publisher, Springfield, Ill.: Atlas of Anatomy and Surgical Approaches in Orthopaedic Surgery—Upper Extremity, by Rodolfo Cosentino, M. D.

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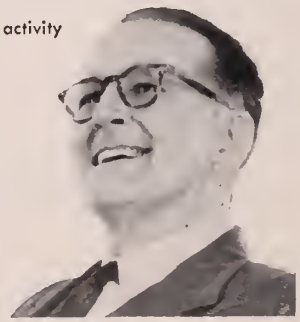
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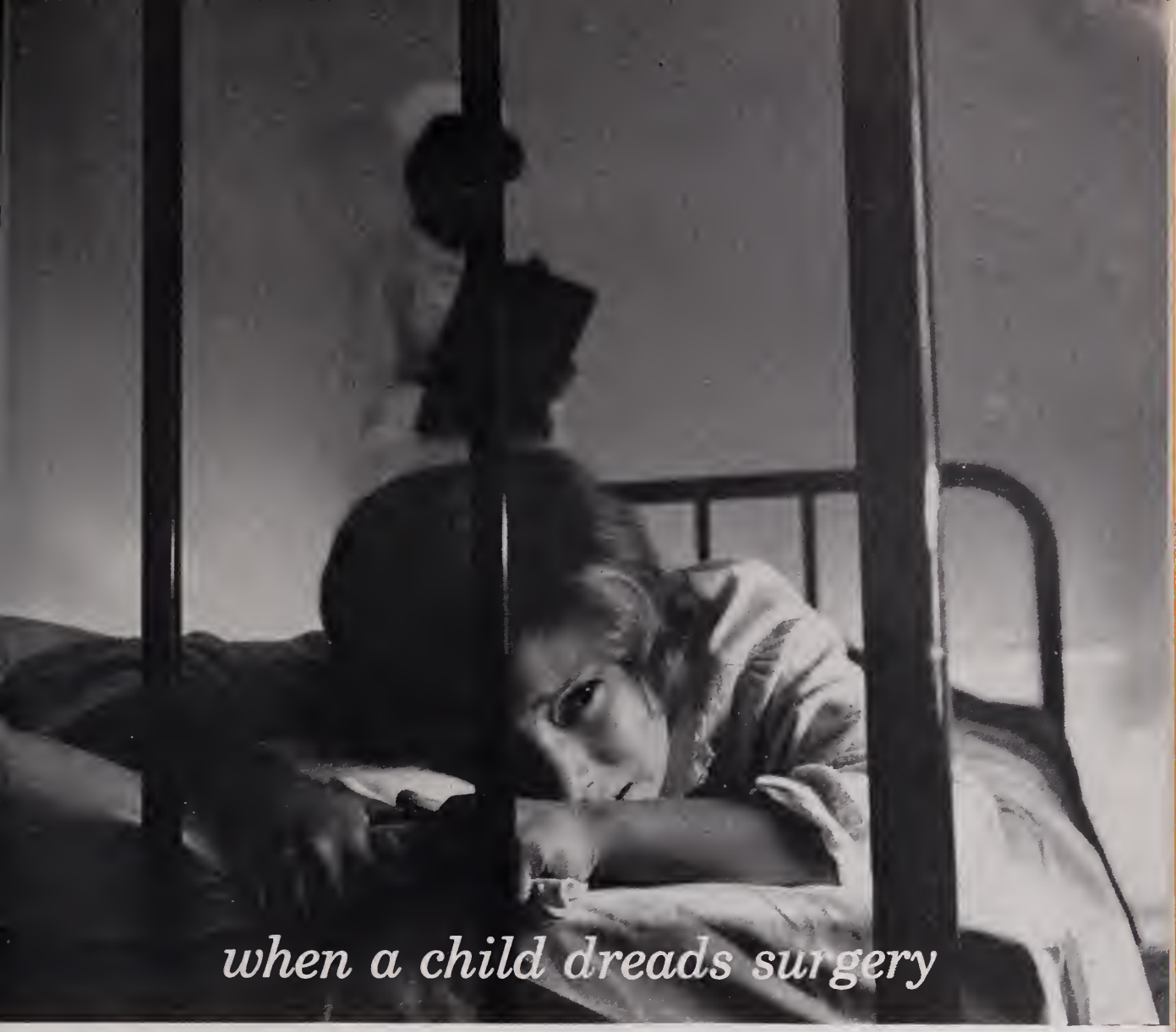
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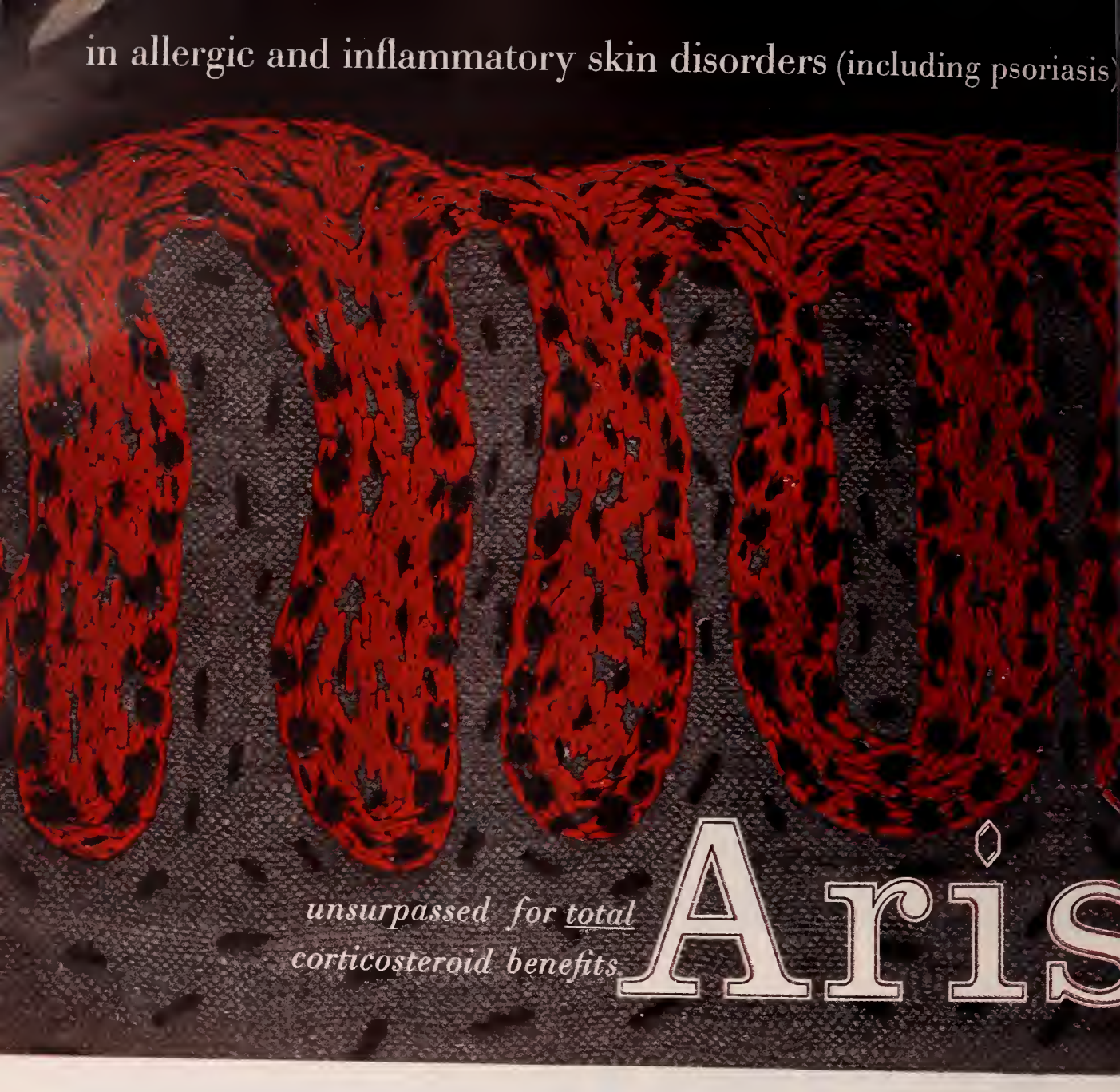
Steiner, L., Webb, C., and Adriani, J.: The Preoperative Sedation of Children, Presented before the Southern Society of Anesthesiologists, Annual Meeting, April 23-25, 1959, Birmingham, Alabama.

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References: 1. Feinberg, S. M.; Feinberg, A. R., and Fisherman, E. W.: *J.A.M.A.* 167:58 (May 3) 1958. 2. Epstein, J. I., and Sherwood, H.: *Conn. Med.* 22:822 (Dec.) 1958. 3. Friedlaender, S., and Friedlaender, A. S.: *Antibiotic Med. & Clin. Ther.* 5:315 (May) 1958. 4. Segal, M. S., and Duvenci, J.: *Bull. Tufts N.E. Medical Center* 4:71 (April-June) 1958. 5. Segal, M. S.: Report to the A.M.A. Council on Drugs, *J.A.M.A.* 169:1063 (March 7) 1958. 6. Hartung, E. F.: *J. Florida Acad. Gen. Practice* 8:18, 1957. 7. Rein, C. R.; Fleischwager, R., and Rosenthal, A. L.: *J.A.M.A.* 165: 1821 (Dec. 7) 1957. 8. McGavack, T. H.: *Clin. Med.* (June) 1959. 9. Freyberg, R. H.; Berntsen, C. A., and Hellman, L.: *Arthritis & Rheumatism* 1:215 (June) 1958. 10. Hartung, E. F.: *J.A.M.A.* 167:973 (June 21) 1958. 11. Zuckner, J.; Ramsey, R. H.; Caciolo, C., and Gantner, G. E.: *Ann. Rheumat. Dis.* 17:398 (Dec.) 1958. 12. Appel, B.; Tye, M. J., and Leibsohn, E.: *Antibiotic Med. & Clin. Ther.* 5:716 (Dec.) 1958. 13. Kalz, F.: *Canad. M.A.J.* 79:300 (Sept.) 1958. 14. Mullins, J. F., and Wilson, C. J.: *Texas J. Med.* 54:648 (Sept.) 1958. 15. Shelley, W. B.; Harun, J. S., and Pillsbury, D. M.: *J.A.M.A.* 167:959 (June 21) 1958. 16. DuBois, E. L.: *J.A.M.A.* 167:1590 (July 26) 1958. 17. McGavack, T. H.; Kao, K. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.: *Am. J. M. Sc.* 236:720 (Dec.) 1958. 18. Council on Drugs: *J.A.M.A.* 169:257 (January) 1959.

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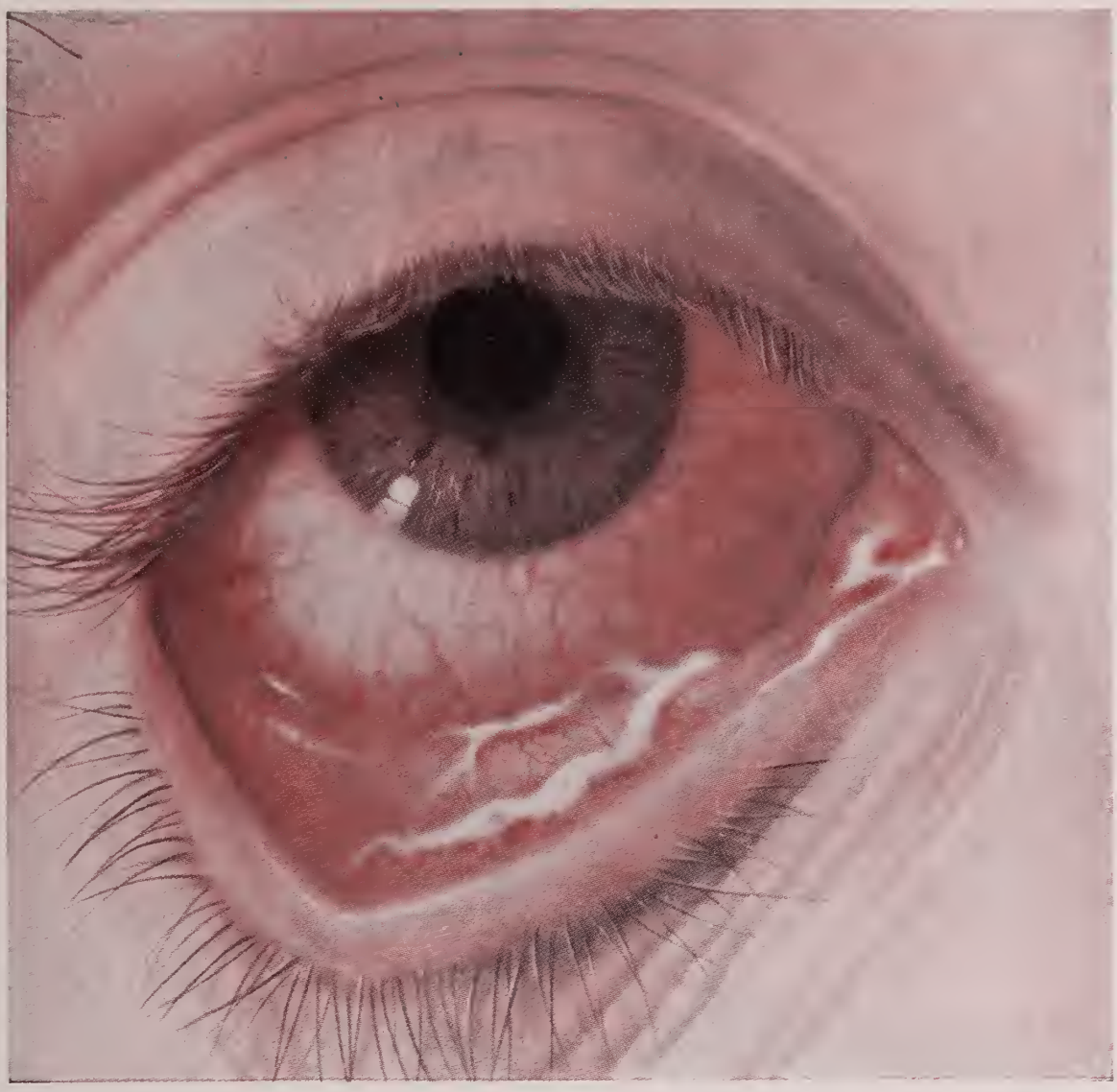
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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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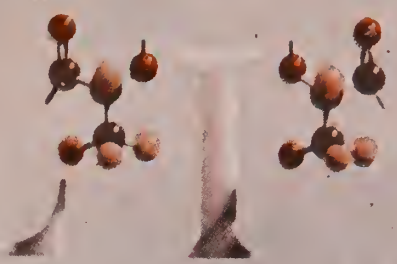
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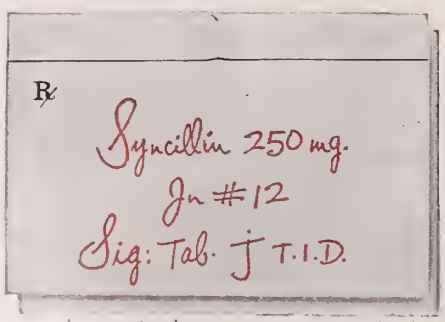
Significance of higher blood levels with SYNCILLIN

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition, these higher levels may be necessary where there is infection in areas with a poor blood supply. Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

Efficacy of SYNCILLIN against staphylococci and other resistant organisms

Studies have shown that SYNCILLIN is effective *in vitro* against a higher percentage of hospital "staph" strains, than penicillin G and penicillin V.[1,2] Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN might be expected to be somewhat more effective. However, since some strains are still resistant to SYNCILLIN as well as to the other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal[3] and gonococcal[4,5] infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



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Reduced rate of inactivation of SYNCILLIN by staph penicillinase

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be more slowly inactivated by this enzyme than penicillin V or penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillin V or G.

Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective *in vitro* against certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. *Therefore, the usual precautions for oral penicillin therapy should always be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, lengthen the interval between dosages.

If superinfection occurs during therapy, appropriate measures should be taken. Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, 1959, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (March 29) 1958. 5. Epstein, E.: J.A.M.A. **169**:1055 (March 7) 1959. 6. Eagle, H. and Musselman, A. D.: J. Bact. **58**:475, 1949.

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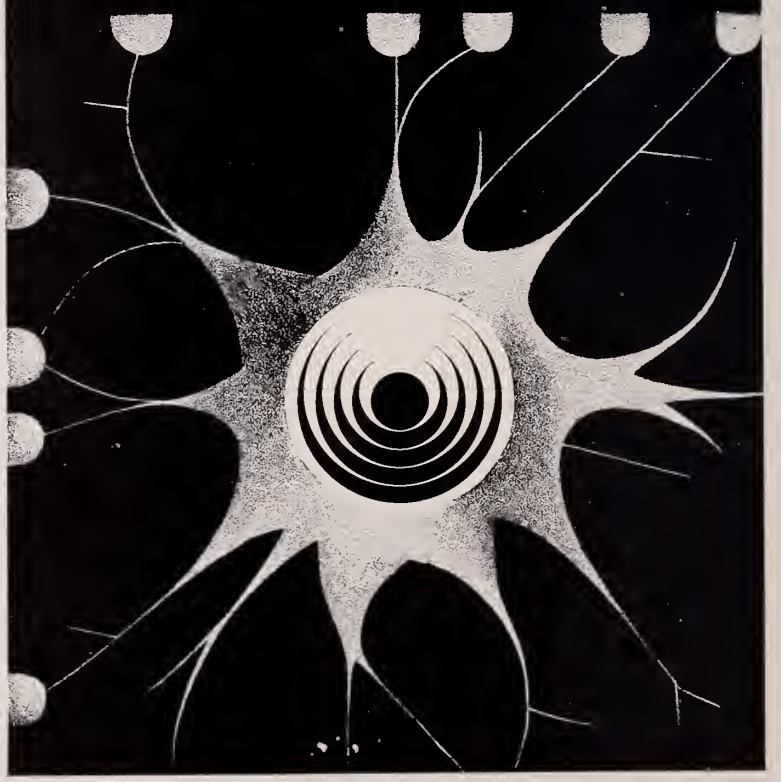
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IN THE NEW, CHERRY-FLAVORED **SYRUP**

75 mg./5 cc. tsp., in 2 fl. oz. bottle—3-6 mg. per lb. daily in four divided doses

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



treats seborrheic dermatitis as an infectious process as well as a cosmetic problem

BETADINE™
(active ingredient: Povidone Iodine)
SHAMPOO

established in 1905
TAILBY-NASON COMPANY, INC.
DOVER, DELAWARE

THE SEBORRHEIC STATE IS ALWAYS FOUND ASSOCIATED WITH BACTERIAL AND YEAST INFECTION. A TRUE ANTIDANDRUFF PREPARATION MUST BE CAPABLE OF DESTROYING THESE MICROORGANISMS.[1]

- kills pathogens on contact
- effective adjunctive therapy in severe pyoderma[2]
- safe, nontoxic, nonirritating, nonsensitizing
- rich golden lather, pleasantly scented, leaves hair easy-to-manage

1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959



Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

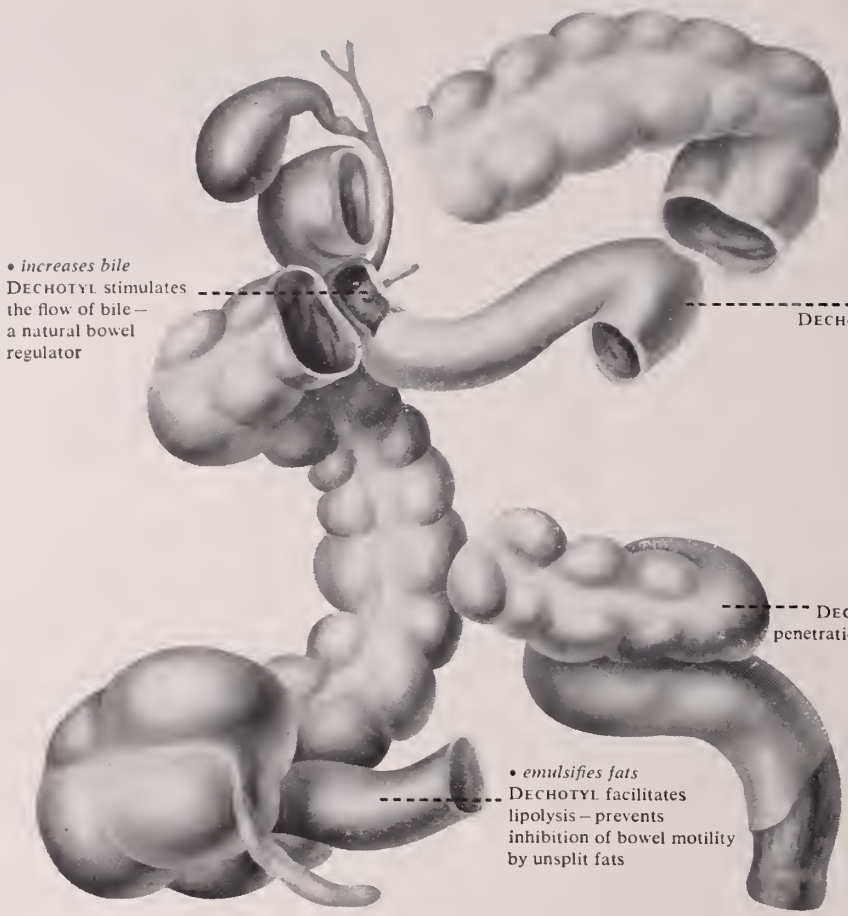
1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. 6:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., 54:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. 9:897 (June, 1958).

*U.S. Pat. No. 2,864,745

THE S.E. MASSENGILL COMPANY
BRISTOL, TENNESSEE
NEW YORK • KANSAS CITY • SAN FRANCISCO



helps free your patient from both... constipation and laxatives

DECHOTYL®

TRABLETS*

well tolerated...gentle transition to normal bowel function



Recommended to help convert the patient—naturally and gradually—to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two TRABLETS at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* TRABLETS *3 or 4 times daily.*

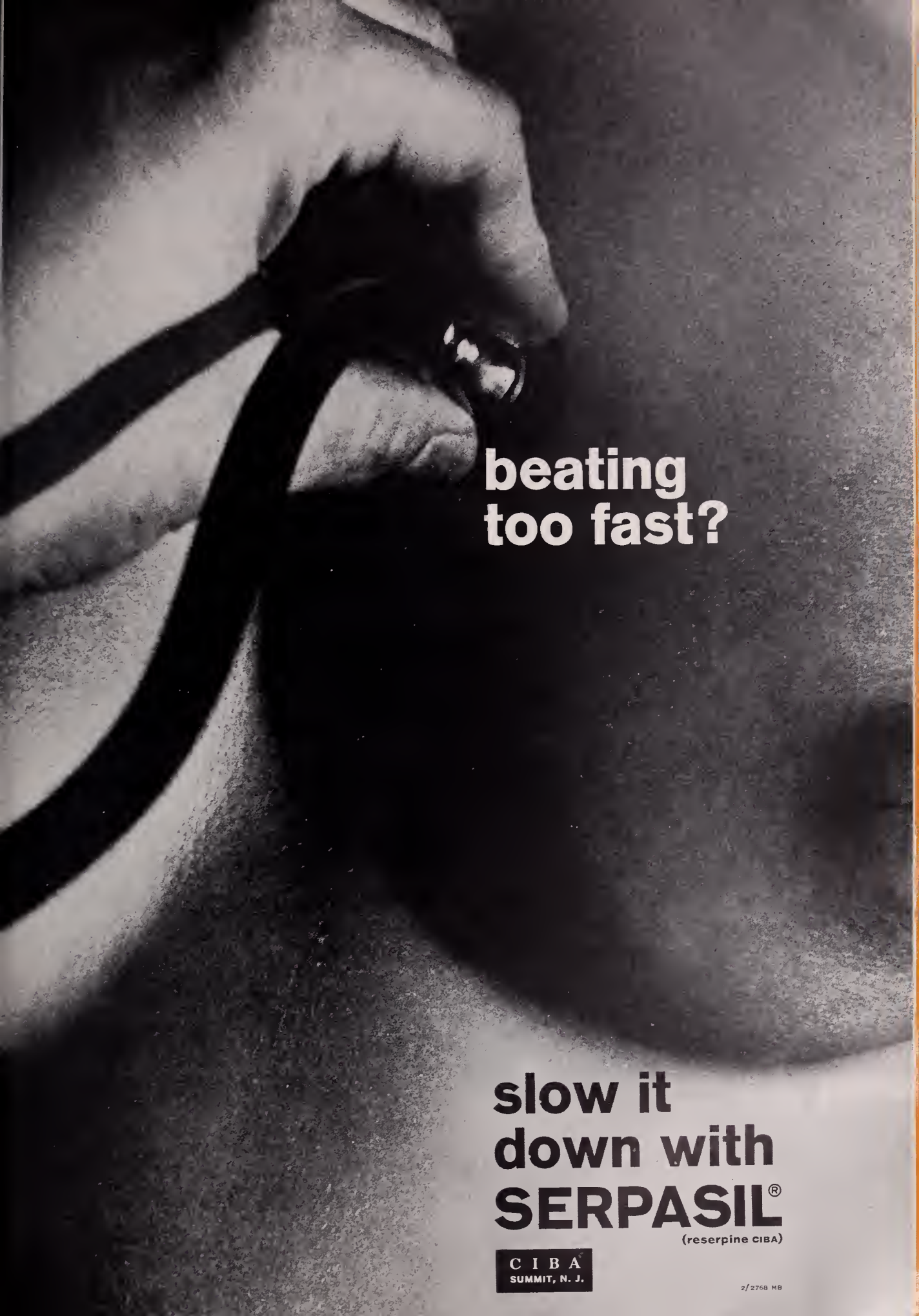
Contraindications: Biliary tract obstruction; acute hepatitis.

DECHOTYL TRABLETS provide 200 mg. DECHOLIN,® (dehydrocholic acid, AMES), 50 mg. desoxycholic acid. and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow TRABLET. Bottles of 100.

*AMES T.M. for trapezoid-shaped tablet.

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

84160


beating
too fast?
slow it
down with
SERPASIL®
(reserpine CIBA)
CIBA
SUMMIT, N. J.
2/2768 MB



The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, **even while he sleeps.** The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.[1]

COMPARE THE DATA ON ENARAX... the new combination of an **inherently** long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

OBSERVE THE OXYPHENCYCLIMINE REPORTS...

McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."[1]

Kemp: "...for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action...may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."[3]

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

LOOK AT THE RESULTS WITH ENARAX[4,5]:

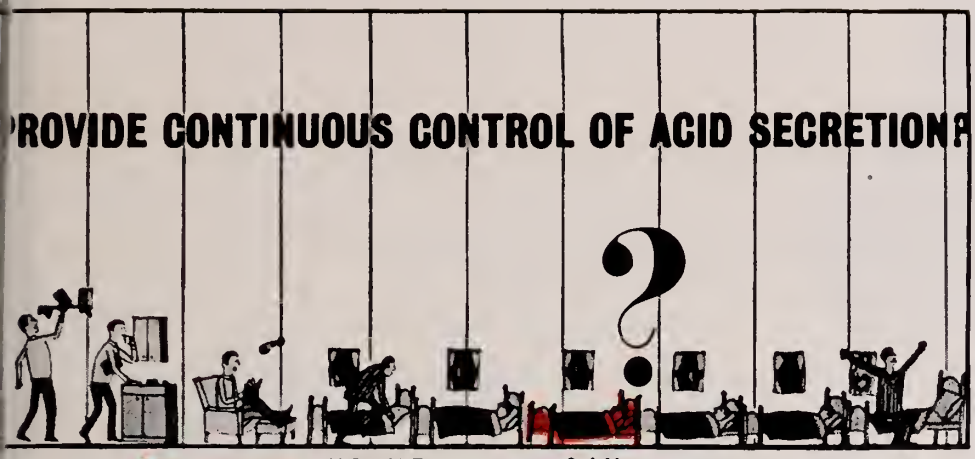
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does.**

ENARAX®

(oxyphencyclimine plus ATARAX®)

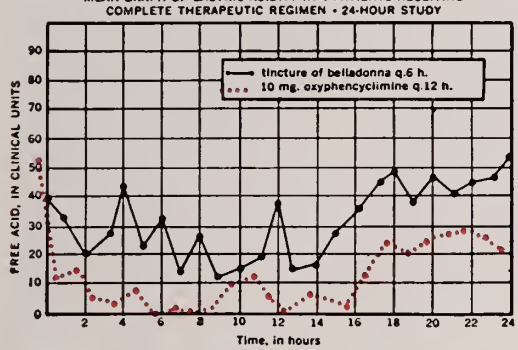
A SENTRY FOR THE G.I. TRACT

ROVIDE CONTINUOUS CONTROL OF ACID SECRETION?



"Prolonged periods of achlorhydria" after 10 mg. oxyphencyclimine q. 12 h.*

MEAN GRAPH OF GASTRIC ACIDITY IN 4 PATIENTS RECEIVING COMPLETE THERAPEUTIC REGIMEN • 24-HOUR STUDY



Clinical Diagnosis: Peptic Ulcer—Gastritis—Gastroenteritis—Colitis—Functional Bowel Syndrome—Duodenitis—Hiatus Hernia (symptomatic)—Irritable Bowel Syndrome—Pylorospasm—Cardiospasm—Biliary Tract Dysfunctions—and Dysmenorrhea.

Clinical Results: Effective in over 92% of cases.

As for Safety: "Side reactions were uncommon, usually no more than dryness of the mouth...."[4]

Each ENARAX tablet contains:

Oxyphencyclimine HCl ..... 10 mg.
Hydroxyzine (ATARAX®) ..... 25 mg.

Dosage: One-half to one tablet twice daily—preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Stelgmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

ROERIG Rx

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being™

Q. *When you want to reduce serum cholesterol and maintain it at a low level, is medication more realistic than dietary modifications?*

A. *Maintenance of lowered cholesterol concentration in the blood is a life-long problem. It is usually preferable, therefore, to try to obtain the desired results through simple dietary modification. This spares the patient added expense and permits him meals he will relish.*



The modification is based on a diet to maintain optimum weight plus a judicious substitution of the poly-unsaturated oils for the saturated fats. One very simple part of the change is to cook the selected foods with poly-unsaturated Wesson. In the prescribed diet, this switch in type of fat will help to lower blood serum cholesterol and help maintain it at low levels. The use of Wesson permits a diet planned around many favorite and popular foods. Thus the patient finds it a pleasant, easy matter to adhere to the prescribed course.

Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, Wesson is unsurpassed by any readily available brand.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50% . Only the lightest cottonseed oils of highest iodine number are selected for Wesson. No significant variations are permitted in the 22 exacting specifications required before bottling.

Wesson satisfies the most exacting appetites. To be effective, a diet must be *eaten* by the patient. The majority of housewives prefer Wesson particularly by the criteria of odor, flavor (blandness) and lightness of color. (Substantiated by sales leadership for 59 years and reconfirmed by recent tests against the next leading brand with brand identification removed, among a national probability sample.)

Chicken, grilled with homemade Wesson barbecue sauce, is low in saturated fat—and delicious eating. It gives longer lasting satisfaction.



FREE *Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N., 210 Baronne St., New Orleans 12, La.*

Wesson's Important Constituents

Wesson is 100% cottonseed oil . . . winterized and of selected quality

Linoleic acid glycerides (poly-unsoturoted)	50-55%
Oleic acid glycerides (mono-unsoturoted)	16-20%
Tatal unsaturated	70-75%
Palmitic, stearic and myristic glycerides (soturated)	25-30%
Phytasteral (predaminontly beta sitosteral)	0.3-0.5%
Tatol tocapherols	0.09-0.12%

Never hydrogenated—completely solt free

Each pint af Wesson cantains 437-524 Int. Units of Vitamin E



A biochemical compound used to diminish intestinal gas in healthy persons and those patients having digestive disorders ■

KANULASE

Each Kanulase tablet contains Dorase† 320 units, combined with pepsin, N.F., 150 mg.; glutamic acid HCl, 200 mg.; pancreatin, N.F., 500 mg.; oxbile extract, 100 mg. Dosage: 1 or 2 tablets at mealtime. Supplied: Bottles of 50 tablets.

†DORSEY BRAND OF CELLULASE, EXPRESSED AS DIGESTIVE ACTIVITY UNITS

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

IN SENILE CONFUSION . . .



CONTINUOUS CEREBRAL OXYGENATION

WITH

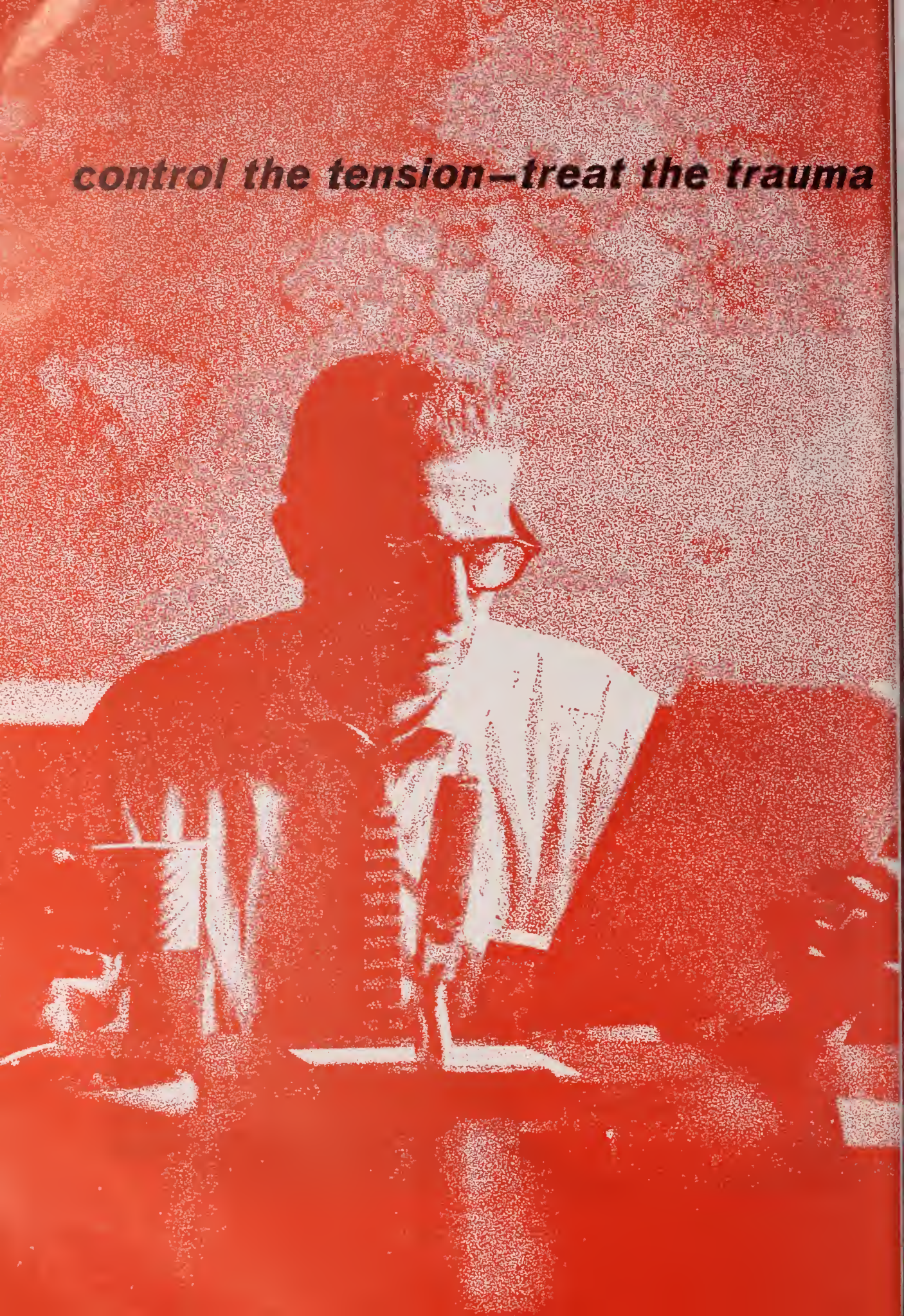
ONE

Geroniazol TT* b.i.d.

- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio


control the tension–treat the trauma

...Pathibamate® 400 200

meprobamate with PATHILON® tridihexethyl chloride Lederle

greater flexibility in the control of tension, hypermotility and excessive secretion in gastrointestinal dysfunctions

PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

mebrobamate (400 mg. or 200 mg.) widely accepted tranquilizer and . . .

PATHILON (25 mg.)—anticholinergic noted for its peripheral, atropine-like action, with few side effects.

The clinical advantages of PATHIBAMATE have been confirmed by nearly two years' experience in the treatment of duodenal ulcer; gastric ulcer; intestinal colic; spastic and irritable colon; ileitis; esophageal spasm; anxiety neurosis with gastrointestinal symptoms and gastric hypermotility.

Two dosage strengths—PATHIBAMATE-400 and PATHIBAMATE-200 facilitate individualization of treatment in respect to both the degree of tension and associated G.I. sequelae, as well as the response of different patients to the component drugs.

Supplied: **PATHIBAMATE-400**—Each tablet (yellow, 1/2-scored) contains meprobamate, 400 mg.; PATHILON tridihexethyl chloride, 25 mg.

PATHIBAMATE-200—Each tablet (yellow, coated) contains meprobamate, 200 mg.; PATHILON tridihexethyl chloride, 25 mg.

Administration and Dosage: **PATHIBAMATE-400**—1 tablet three times a day at mealtime and 2 tablets at bedtime.

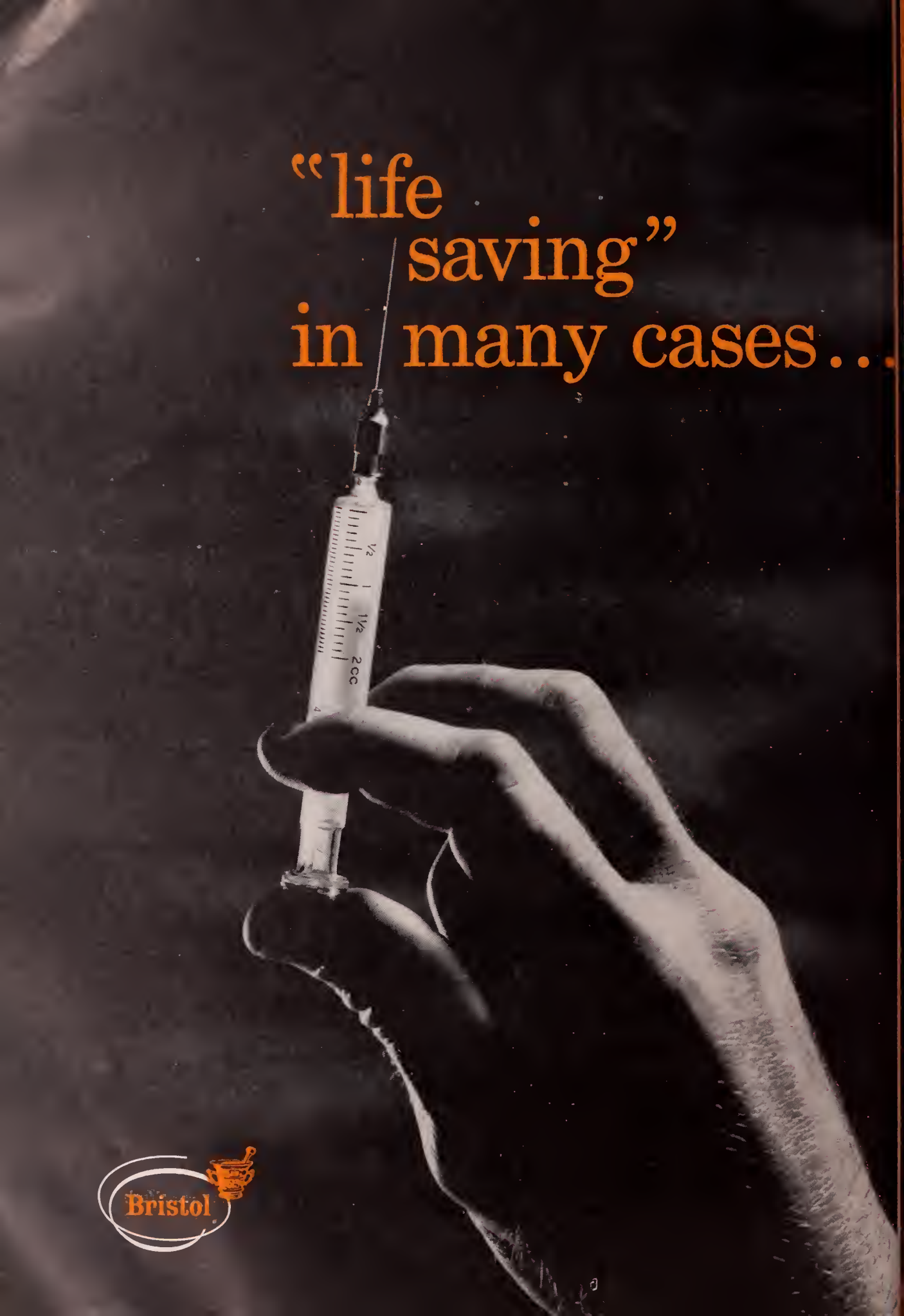
PATHIBAMATE-200—1 or 2 tablets three times a day at mealtime and 2 tablets at bedtime.

Adjust to patient response.

Contraindications: glaucoma; pyloric obstruction, and obstruction of the urinary bladder neck.

Lederle

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York


"life saving" in many cases...
½
1½
2 cc
Bristol

KANTREX®

INJECTION

Kanamycin Sulfate Injection

...a highly potent, bactericidal antibiotic for combating staph and gram negative infections

...well tolerated when used on a properly individualized dosage schedule which does not induce excessive blood levels

"In many instances its effect has been dramatic and life saving . . ."[1]

"Six of the patients who survived were considered to be terminally ill at the time kanamycin was started but showed dramatic improvement and eventual complete recovery."[2]

"...indeed, the results [with kanamycin] are the most remarkable ever achieved with otherwise fatal staphylococcal infections that we have ever seen."[3]

"There appears to be no doubt that kanamycin has been lifesaving in those instances in which organismal resistance precludes the use of other antimicrobials."[4]

Information on dosage, administration and precautions contained in package insert or available on request.

SUPPLY: KANTREX Injection, 0.5 Gm. kanamycin (as sulfate) in vial containing 2 ml. volume. KANTREX Injection, 1.0 Gm. kanamycin (as sulfate) in vial containing 3 ml. volume.

REFERENCES: 1. Yow, E. M.: Practitioner 182:759, 1959. 2. Yow, M. D., and Womack, G. K.: Ann. N. Y. Acad. Sci. 76:363, 1958. 3. Bunn, P. A., Baltch, A., and Krajnyak, O.: Ibid. 76:109, 1958. 4. Council on Drugs, J.A.M.A. 172:699, 1960.

BRISTOL LABORATORIES, SYRACUSE, NEW YORK

immortals of chinese mythology:



Ho Hsien-Ku

This gentle maiden became an immortal by her unique diet of moonbeams and mother-of-pearl

TODAY...

this steroid of unsurpassed safety and effectiveness holds an enduring place in the medical armamentarium

METICORTEN

METICORTEN,® brand of prednisone, 5 mg. tablets.

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

You will soon receive in your mail a handmade, four-color three-dimensional figure of this Chinese Immortal, mounted and suitable for framing.

S-3468

Schering

a
logical
combination
for
appetite suppression

meprobamate *plus* d-amphetamine

. . . suppresses appetite . . . elevates mood
. . . reduces tension . . . *without* insomnia,
overstimulation, or barbiturate hangover.

anorectic-ataractic

BAMADEX®

MEPROBAMATE WITH D-AMPHETAMINE SULFATE LEDERLE

Each coated tablet (pink) contains: meprobamate, 400 mg.; d-amphetamine sulfate, 5 mg.
Dosage: One tablet one-half to one hour before each meal.

Lederle

LEDERLE LABORATORIES
A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

THE EARLE JOHNSON SANATORIUM

PRESTON RAY STODARD, M. D.
Medical Director

Specialized treatments in mental disorders and alcoholic and drug addictions.

A limited number of custodial cases accepted.

Fireproof Buildings
Lovely Gardens and Grounds
Healthful Location — All Private Rooms
Excellent Staff

"The Hospital Atmosphere is Avoided"

WRITE P. O. DRAWER 106
or
Telephone 3-3369
MERIDIAN, MISSISSIPPI

after milk and rest, why Donnalate?

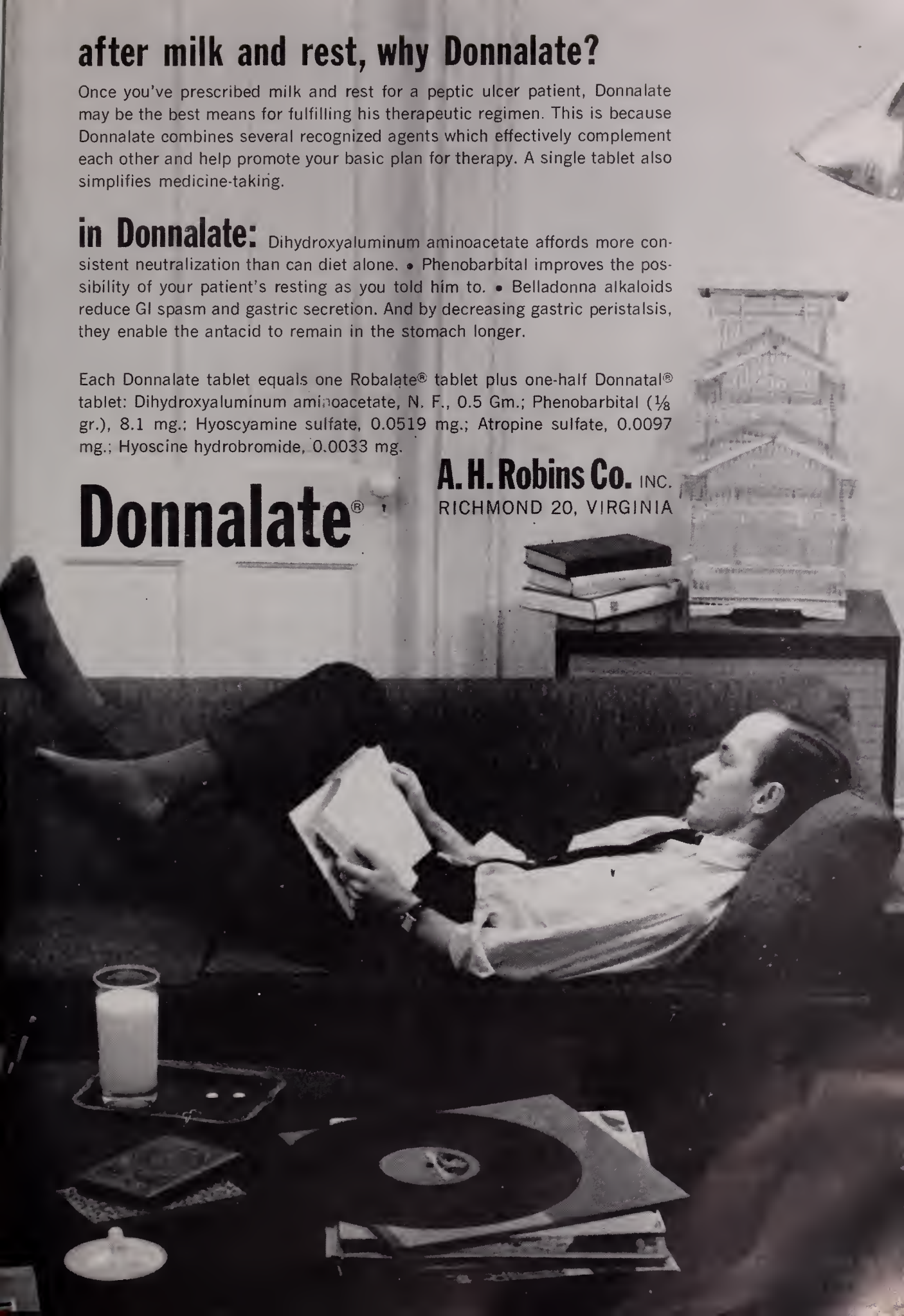
Once you've prescribed milk and rest for a peptic ulcer patient, Donnalate may be the best means for fulfilling his therapeutic regimen. This is because Donnalate combines several recognized agents which effectively complement each other and help promote your basic plan for therapy. A single tablet also simplifies medicine-taking.

in Donnalate: Dihydroxyaluminum aminoacetate affords more consistent neutralization than can diet alone. • Phenobarbital improves the possibility of your patient's resting as you told him to. • Belladonna alkaloids reduce GI spasm and gastric secretion. And by decreasing gastric peristalsis, they enable the antacid to remain in the stomach longer.

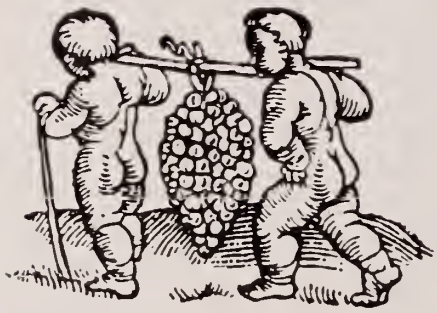
Each Donnalate tablet equals one Robalate® tablet plus one-half Donnatal® tablet: Dihydroxyaluminum aminoacetate, N. F., 0.5 Gm.; Phenobarbital (1/8 gr.), 8.1 mg.; Hyoscyamine sulfate, 0.0519 mg.; Atropine sulfate, 0.0097 mg.; Hyoscine hydrobromide, 0.0033 mg.

Donnalate®

A. H. Robins Co. INC.
RICHMOND 20, VIRGINIA



why wine in digestive disorders?



Although the effects of wine on the digestive system have been discussed for centuries, it has been only in recent years that many of its physiological attributes have been determined.

WINE AND THE SALIVARY GLANDS—The increase in salivary flow following a moderate intake of wine is apparent almost immediately,[1] such increase being attributed to direct sensitization of secretory nerve endings.[2]

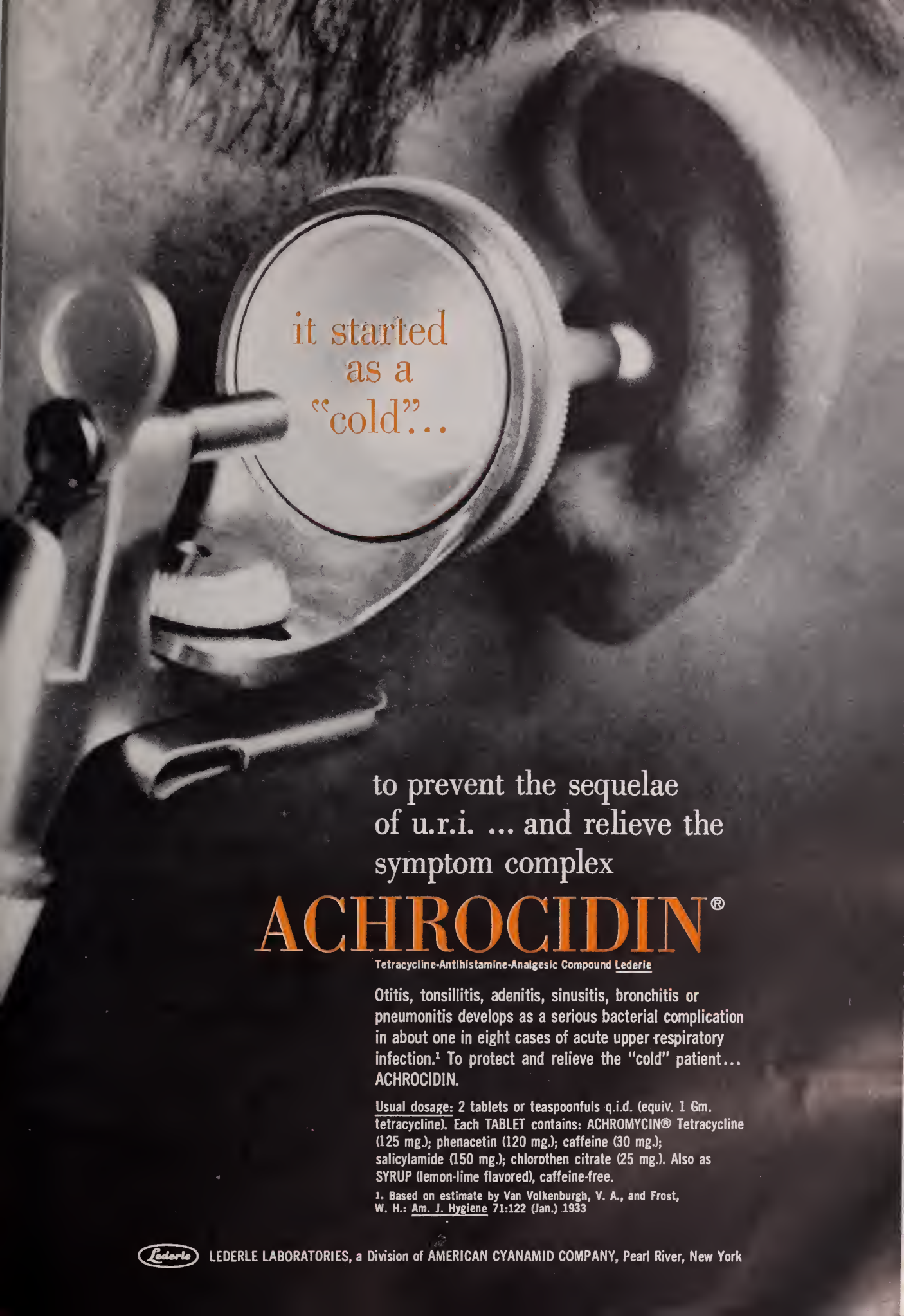
WINE AND GASTRIC SECRETION—With a pH averaging 3.2, wine resembles gastric juice more closely than does any other natural beverage. Its tannins, organic acids and salts of these acids serve as buffering agents to maintain this pH. Relatively low in content of alcohol, table wine has been found to stimulate gastric secretion and induce production of gastric juice high in hydrochloric acid, sodium chloride, rennin and pepsin.[3]

WINE AND THE DIGESTIVE TRACT—With its low concentration of alcohol, wine in moderate consumption has been found to induce a marked increase in biliary flow.[4] This, together with increased function of pancreatic enzymes, may thus encourage better digestion of fatty foods.

THEREFORE—IN THE TREATMENT OF DIGESTIVE DISORDERS—Wine is being widely recommended in the treatment of anorexia, hypochlorhydria without gastritis, mucous colitis, spastic constipation and diarrhea, and in digestive disorders stemming from emotional tension and anxiety.

These and other modern ℞ uses for wine are discussed in the brochure "Uses of Wine in Medical Practice." For your free copy write—Wine Advisory Board, 717 Market Street, San Francisco 3, California.

1. Winsor, A. L. and Strongin, E. I.: J. Exper. Psychol. 16 589 (1933).
2. Beazell, J. M., and Ivy, A. C.: Quart. J. Studies on Alc. 1.45 (1940).
3. Foroy, G., and Weissenboch, R. J.: Hôpitol 25 306 (1937).
4. Okada, S.: J. Physiol. 49 457 (1915).



to prevent the sequelae of u.r.i. ... and relieve the symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Otitis, tonsillitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



NEOCHOLAN®

Your patient will often respond promptly to Neocholan therapy. It greatly increases the flow of thin, nonviscid bile and corrects biliary stasis by flushing the biliary system. It also relaxes intestinal spasm, resulting in an unimpeded flow of bile and pancreatic juice into the small intestine. Neocholan helps to promote proper digestion and absorption of nutrients. It also encourages normal peristalsis by restoring intestinal tone.

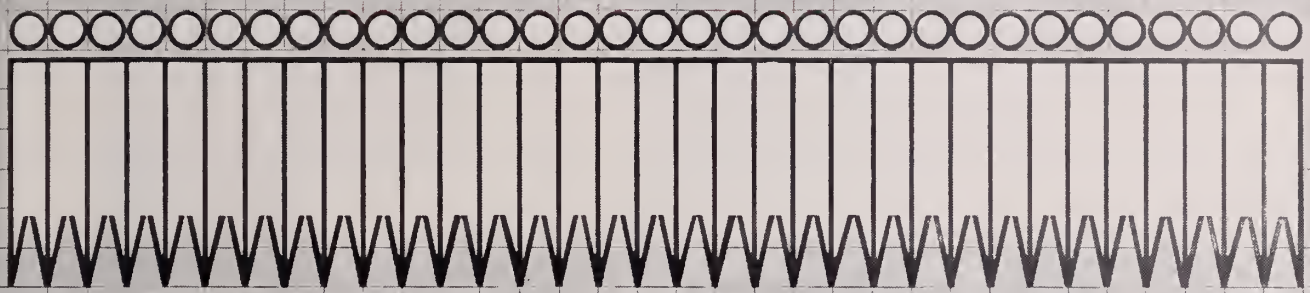
Each tablet provides: Dehydrocholic Acid Compound, P-M Co. 265 mg. (Dehydrocholic Acid, 250 mg.); Homatropine methylbromide 1.2 mg.; Phenobarbital 8.0 mg. Supplied in bottles of 100 tablets.

PITMAN-MOORE COMPANY
DIVISION OF ALLIED LABORATORIES, INC.
INDIANAPOLIS, INDIANA

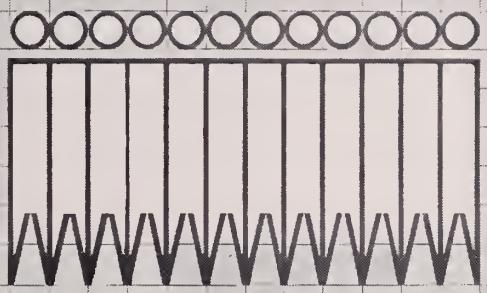
Decadron®

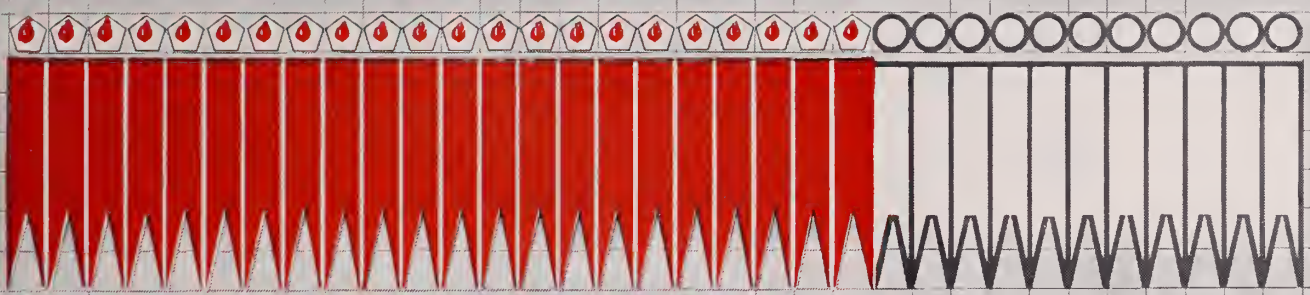
DEXAMETHASONE

treats more patients more effectively...



Of 45 arthritic patients
who were refractory
to other corticosteroids*





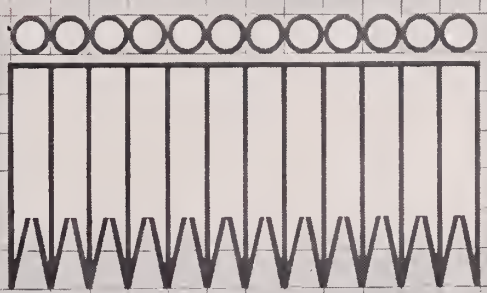
22 were successfully
treated with **Decadron**[1,2]

1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

DECADRON is a trademark of Merck & Co., Inc.

Additional information on DECADRON is available to physicians on request.



Merck Sharp & Dohme

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

reaches all nasal and paranasal membranes *systemically*[1]



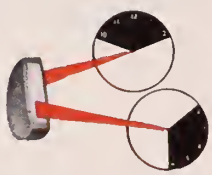
Pharmacologically balanced formula for prompt symptomatic relief

- in nasal and paranasal congestion
- in sinusitis and postnasal drip
- in allergic reactions of the upper respiratory tract

Triaminic*[2,3] *is safer and more effective than topical medication

- transported systemically to *all* respiratory membranes
- provides longer-lasting relief
- presents no problem of rebound congestion
- avoids "nose drop addiction"

Relief is prompt and prolonged because of this special timed-release action:



first — the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then — the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:
Phenylpropanolamine HCl.....50 mg.
Pheniramine maleate.....25 mg.
Pyrilamine maleate.....25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides: ½ the formulation of the Triaminic Tablet.

Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides: ¼ the formulation of the Triaminic Tablet.

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1. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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IN ELDERLY PATIENTS well tolerated by debilitated patients	"... seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. 7:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. 8:1584 (Oct.) 1957. Negri, F.: Minerva med. 48:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics 11:312 (July) 1956.
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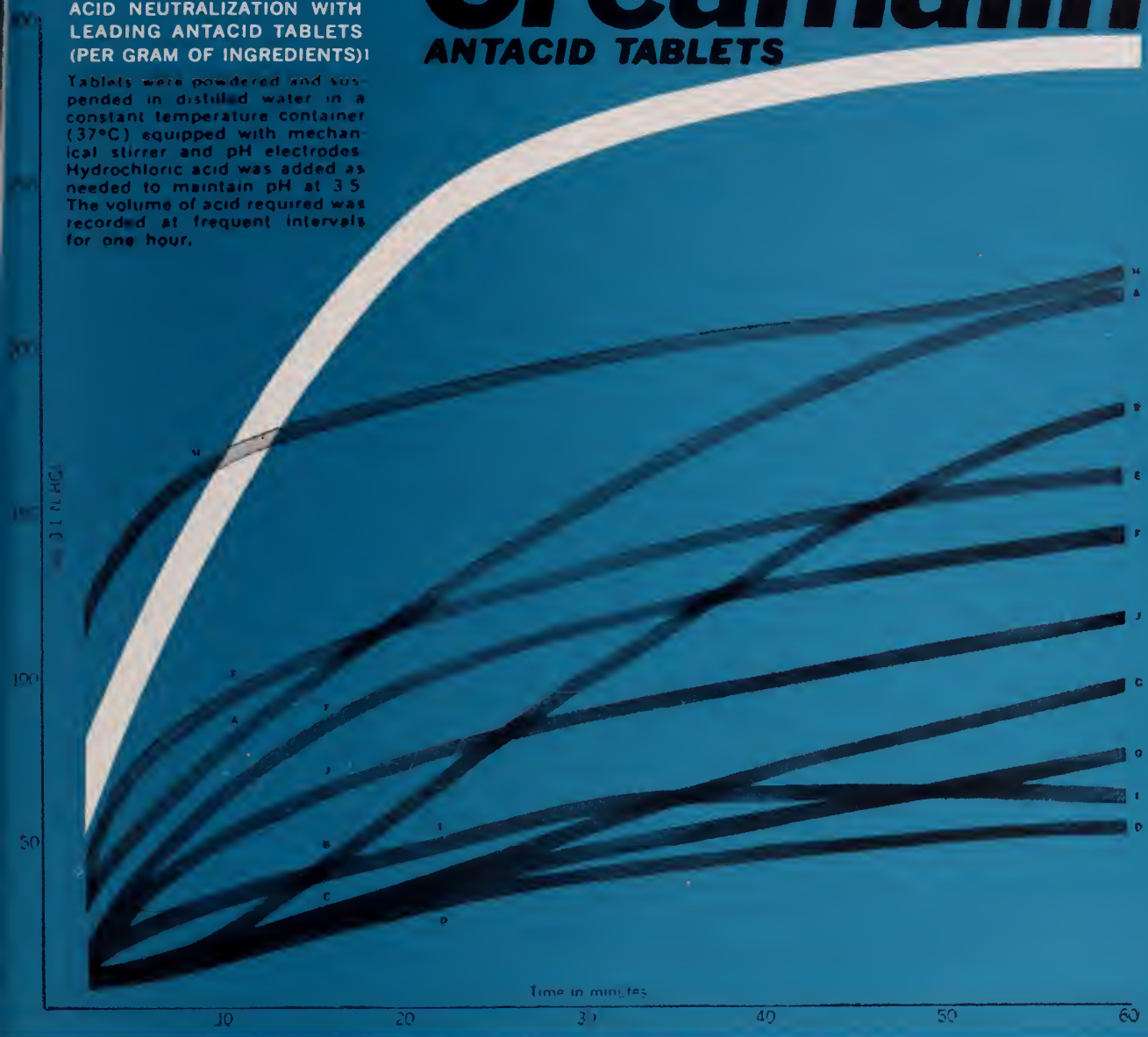
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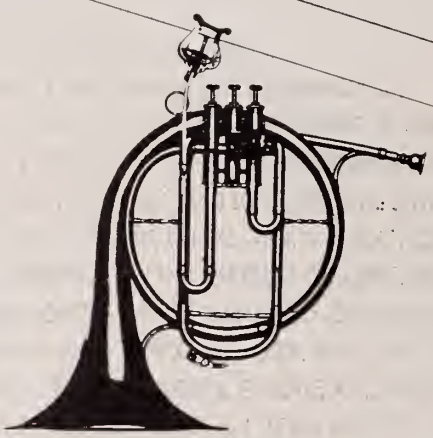
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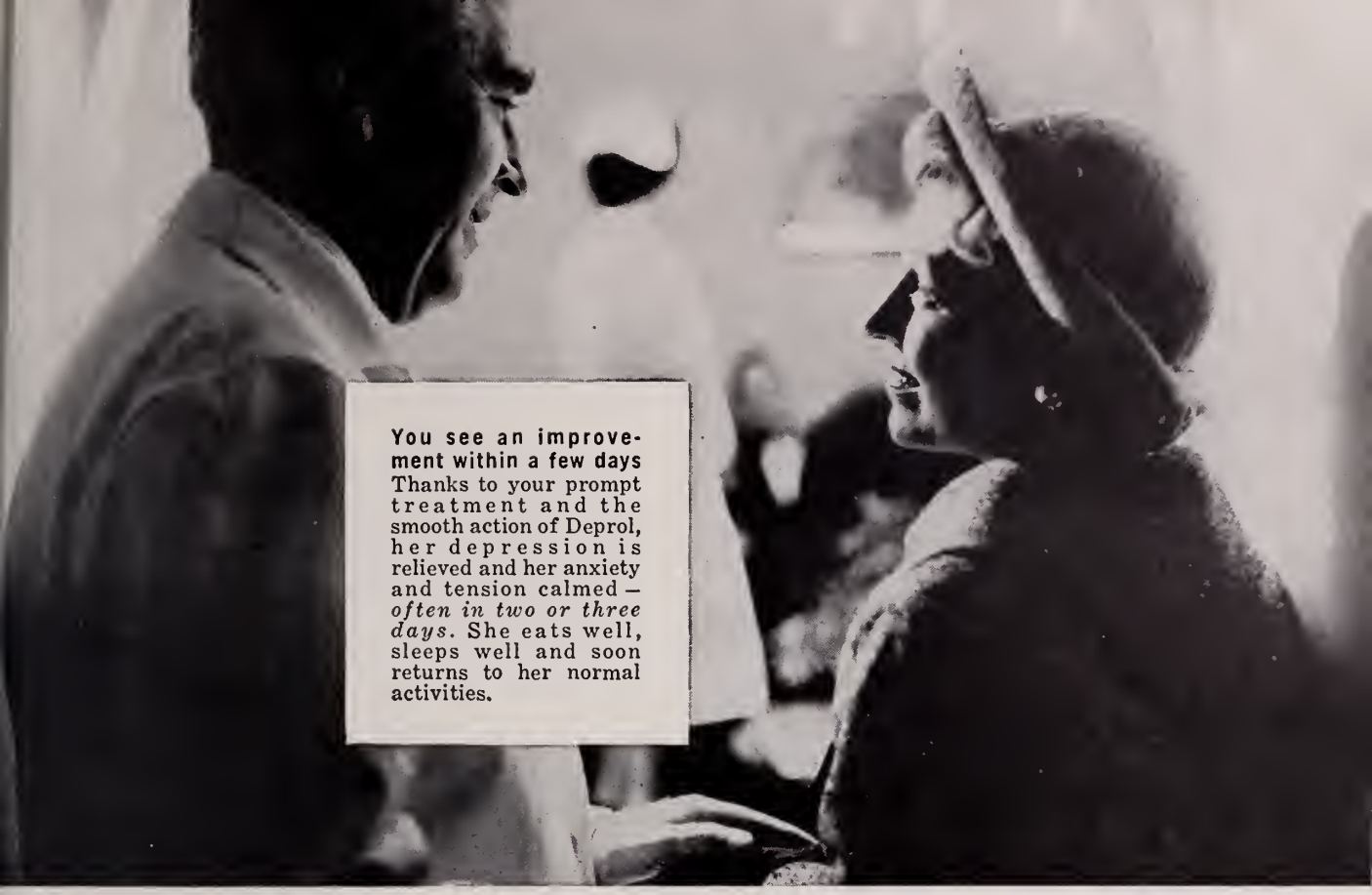
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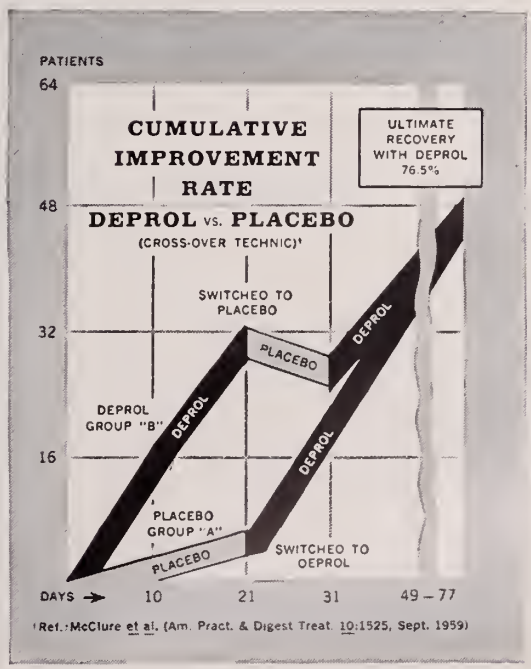
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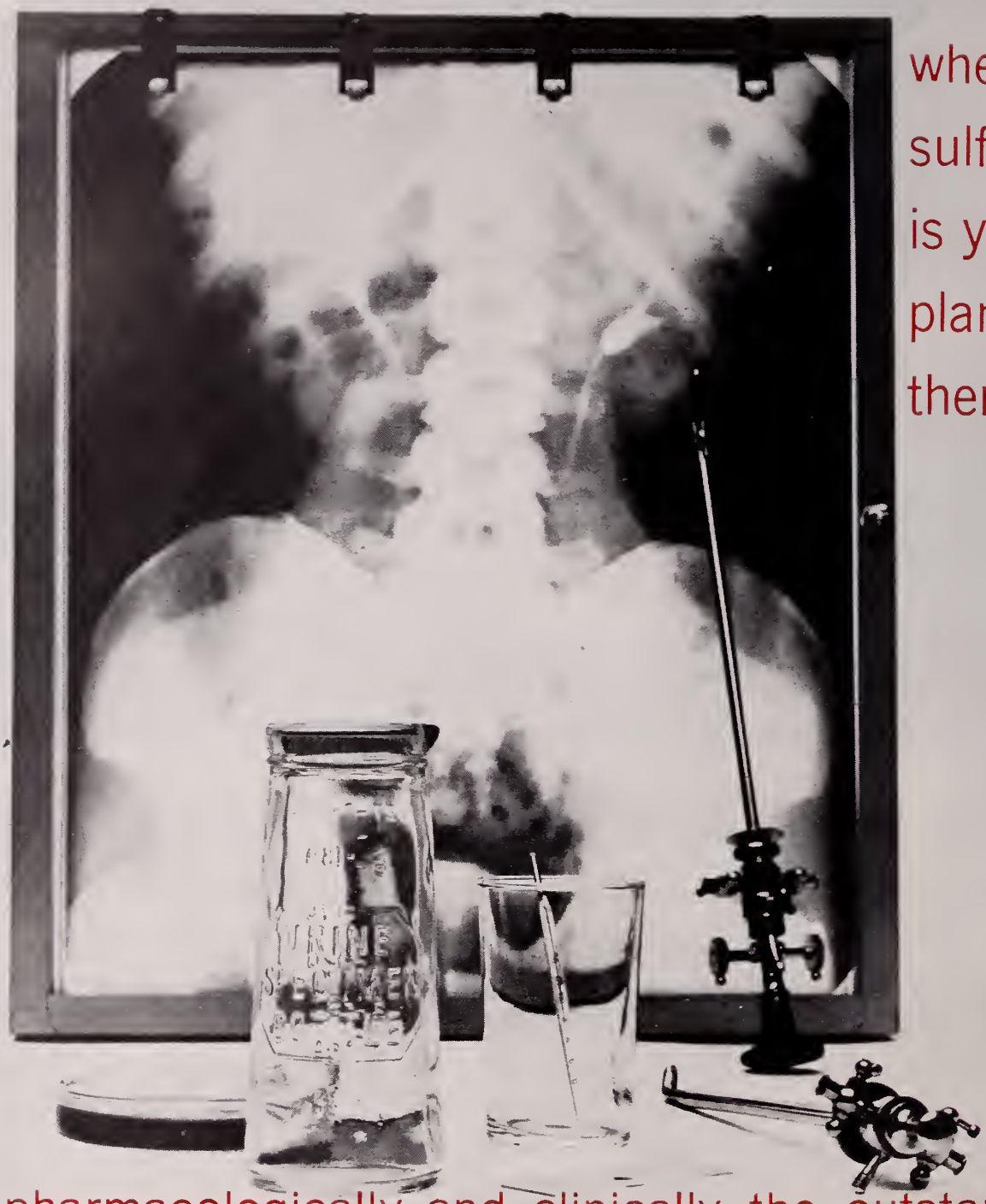


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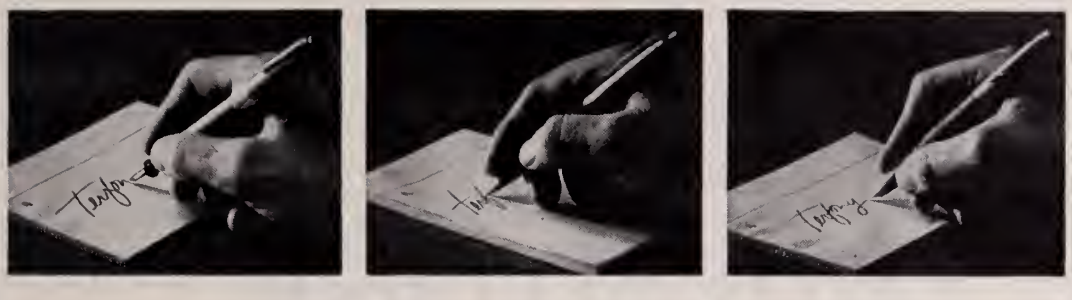
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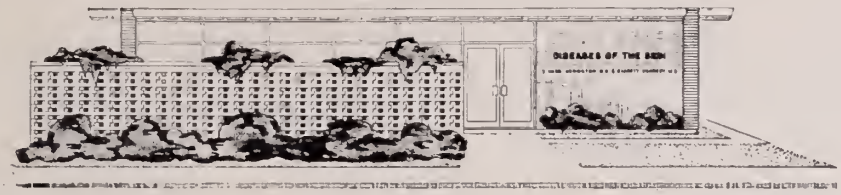
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Prepared by Leopold G. Koss, M. D. of Cornell University Medical School and Grace R. Durfee, B. S., Chief Cyto-technologist, Memorial Center for Cancer and Allied Diseases, the production of this material was made possible by a grant from the Harry M. Lasker Memorial Fund of the American Cancer Society.

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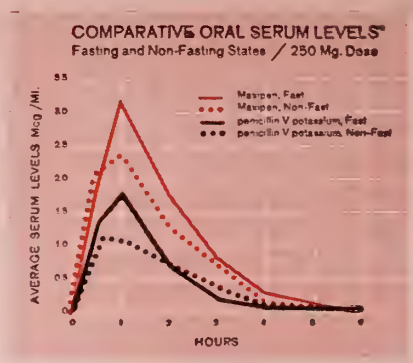
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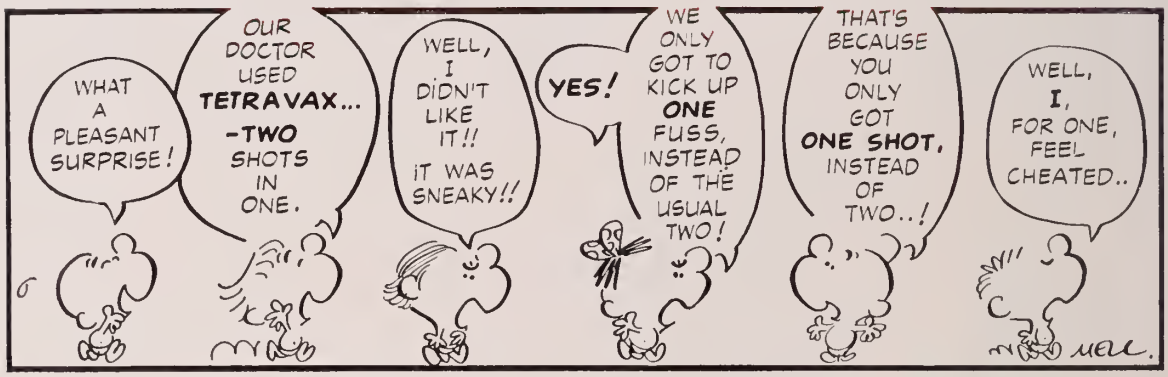
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2. Smith, J. G., Jr.; Zawisza, R. J., and Blank, H.: *A.M.A. Arch. Dermat.* 78:643 (Nov.) 1958.

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MAY, 1960

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Clinical and Laboratory Correlation of the Transaminase Test, an Analysis of 111 Patients For a Period of Thirteen Months

• The transaminase test is useful in making a differential diagnosis on patients with a clinical picture compatible with myocardial infarction, but whose electrocardiographic findings are not confirmatory. It is also of equal aid in the diagnosis of hepatic disease.

ALBERT M. HAND, M. D.†
JAMES W. WILSON, JR., M. D.†
Shreveport

DISEASE processes frequently result in a measurable alteration or exaggeration of one or more of the body physiologic enzyme functions, and studies of these systems in cooperation with the clinician is an integral function of the diagnostic laboratory.

Laboratory tests in the study of patients for myocardial disease have not been very specific. With the advent of anticoagulant therapy for coronary occlusion, and its advantages and dangers, it is most important in the cardiac patient to establish the presence or absence of myocardial infarction as opposed to coronary insufficiency. Likewise, in reference to the liver, the establishment of the presence of hepatic cell damage is equally important but is less of an emergency than in the patient being studied for coronary artery disease. The serum transaminase test (SGO-T) is now widely used and is of value, we believe, in the study of patients for cardiac or hepatic pathology.

The enzyme glutamic oxalacetic transaminase is present at a relatively constant level in the serum of humans and animals, the enzyme being found in concentrated amounts in the myocardium, muscle, brain, liver, kidney, testis and lung.[1] Diseases of these organs effect the release of increased amounts of transaminase into the circulation, and the enzyme level in the serum can be measured as one index of pathology in these organs.

The term "transaminase" refers to the property of the enzyme glutamic oxalacetic transaminase (GO-T) to promote a transfer of the ammonia radicle (NH_3) in the following chemical reaction: aspartic acid plus alpha ketoglutaric acid

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society in New Orleans, May 5, 1960.

† From the T. E. Schumpert Memorial Sanitarium, Shreveport, Louisiana.

in the presence of GO-T yields oxalacetic acid and glutamic acid. The oxalacetic acid formed decomposes to pyruvic acid. In the test procedure a dye dinitrophenylhydrazine is added and in the presence of sodium hydroxide this compound turns an intense brown which may be measured by spectrophotometer or colorimeter. The values are expressed in units: one unit represents the formation of chromogenic material equivalent to 1 gamma pyruvate. The normal transaminase level is below 40 units, a value to 40-50 units is considered a borderline result, and a value of above 50 units is considered an abnormal increase, as reported by LaDue et al.[2]

It is important in a diagnostic laboratory to evaluate the results of such a critical test as the transaminase study, and to make comparisons with the results of others cited in the literature. This study was begun originally in preparation for a Schumpert Sanitarium Clinico-Pathological Conference at which the importance of the test was emphasized, and the clinician (JWW) pointed out the need for a study of our own cases. Therefore, we have examined the records of 111 patients on whom one or more transaminase tests were done in a recent thirteen months period, January 1958 through January 1959. The purpose of this material is to present a brief analysis of the clinical conditions of this group of 111 patients in correlation with the transaminase study.

Materials, Results and Discussion

The 111 patients studied for a period of thirteen months were selected simply on the basis of having had a transaminase study performed in the laboratory of this hospital, and having been an indwelling patient. Outpatients were excluded. The patients had been studied for either cardiac or hepatic pathology; hospital records were assayed by both of us, and the cases were grouped into the following categories.

Group I. Patients Studied for Heart Disease—Transaminase Level Above 50 Units, Clinical Course and Electrocardiogram Diagnostic of Myocardial Infarction.—24 Patients.

The transaminase values in these 24 patients ranged from 50 to 550 units. All had electrocardiographic tracings read as diagnostic of myocardial infarction. The enzyme tests were run from on the first day of clinical illness to as late as the seventh day of illness. In 4 cases two or more studies for transaminase reached a level above 50 units after an original normal (less than 40 units) or border-line value (from 40-50 units). In the other 20 patients the test was above 50 units on the first examination. Prognosis for survival, in our experience, was not indicated by the degree of elevation.

Discussion: Four of the 24 patients of Group I were admitted with clinical impressions other than myocardial infarction, and included were diagnoses of coronary insufficiency (3) and congestive heart failure secondary to hypertension (1). The transaminase test in these 4 patients was of value in establishing the presence of myocardial infarction. The problem is illustrated by the following case:

> WF, age 76, admitted October 8, 1958, for acute congestive heart failure attributed to hypertension. On the day of admission, the serum transaminase level was 45 units, and the electrocardiogram was suggestive, but not diagnostic of infarction. Subsequent daily tests revealed levels of 260,130 and 70 units. The diagnosis of myocardial infarction was confirmed by electrocardiogram on the second day of hospitalization, at which time a serum transaminase level was 260 units.

In the other 20 patients of Group I, the clinical and electrocardiographic diagnosis of infarction was correlated with elevated serum transaminase levels.

Group II. Patients Studied for Heart Disease—Transaminase level less than 40 units.—47 patients.

This group was constituted largely of patients who had a final diagnosis of coronary insufficiency due to arteriosclerosis, but many other interesting conditions were observed. The transami-

nase values ranged from 6 to 35 units, and diagnoses are shown in Table 1.

TABLE 1
GROUP II—DIAGNOSES

Coronary Artery Insufficiency Due to Arteriosclerosis	25
Arteriosclerotic Heart Disease with Congestive Heart Failure	3
Hypertensive Cardiovascular Disease with Congestive Heart Failure	3
Idiopathic Pericarditis	2
Cervical Arthritis	3
Duodenal or Gastric Ulcer	5
Gastro-enteritis	4
Pylorospasm	2

Discussion: In reference to these 47 patients of Group II, the clinical findings were similar to, and often identical to, those patients in Group I who had confirmed diagnoses of myocardial infarction. In 20 of the 47 patients of Group II, the admitting impression was myocardial infarction, and in another 16 patients, the admitting impression was coronary insufficiency. Of the 20 patients with a clinical impression of myocardial infarction, 13 had abnormal electrocardiograms of a type that created confusion as to the diagnosis of infarction of the myocardium. In 10 of these there were "T" wave alterations, minor "ST" segment changes, or residual evidence for previous infarction; in 2, bundle branch block was present, and in 1 a supraventricular tachycardia was present. The problem is illustrated by the following case:

WF, age 49, admitted January 7, 1959, with chest pain of several hours' duration. An electrocardiogram showed left bundle branch block, and the transaminase level on the second hospital day was 12 units. A diagnosis of coronary insufficiency was later substantiated when the electrocardiogram reverted to a pattern of "lateral ischemia".

Group III. Patients Studied for Heart Disease—Transaminase level 50 units or greater, but not confirmed as myocardial infarction.—8 patients.

These 8 patients had transaminase values of 50, 52, 53, 61, 83, 94, 104 and 122 units. All were suspected of having myocardial infarction. Six patients were signed out as coronary insufficiency due to arteriosclerosis, one as pericarditis with myocardial ischemia, and one had a duodenal ulcer, but his electrocardiogram revealed a complete AV block. All 8 patients had electrocardiographic abnormalities, but the changes were not conclusive of myocardial infarction.

Discussion: In reviewing the records of the 8 cases of Group III, in retrospect it is probable that, in these patients, some degree of myocardial infarction may have occurred. All of the 8 had electrocardiographic abnormalities that were borderline or equivocal, and it is likely that if the electrocardiographic changes had been more definite, the patients would have been signed out as myocardial infarction. The following case is illustrative:

WM, age 48, admitted September 5, 1958, following acute onset of chest pain, relieved somewhat by nitroglycerin. On the first, second, third and fourth hospital days, the transaminase levels were 50, 61, 40 and 26 units. The electrocardiogram revealed minor degrees of ST segment depression in chest leads, and questionable ST segment elevation in leads II, III and AVF. Also, there were signs of old posterior infarction. The patient was signed out as coronary insufficiency.

Group IV. Patients Studied for Heart Disease—Transaminase levels less than 40 units, but diagnosed as myocardial infarction.—5 patients

This important group of 5 patients had electrocardiographic changes diagnostic of myocardial infarction and revealed transaminase levels within a range of normal, as in Table 2.

TABLE 2
GROUP IV—TRANSAMINASE LEVELS

Race/Sex/Age	Transaminase/Units	Time of Test/Days
1. WM, 54	34 u.	2nd day
2. WM, 63	38 u.	2nd day
3. WF, 60	35 u.	1st day
4. WF, 72	14 u.	1st day
5. WM, 37	15 u.	2nd day

Discussion: In studying the records of the 5 patients from Group IV, it was found that, in one, a single test was performed less than twelve hours after the clinical onset of the coronary occlusion. LaDue et al.[2] and Agress[3] have shown

that the level might not be expected to be abnormal at this time. The earliest rise after clinical infarction is generally at about twelve hours, with an average peak at about twenty-four hours. "Some authors have found elevations occurring as early as two hours or as late as ninety-six hours after infarction. Return to normal has varied between two and eight days," as stated by Agress.[3] In 2 patients of Group IV, the transaminase level was actually obtained prior to the clinical onset of coronary occlusion, although the patients were in the hospital being treated for coronary insufficiency. In the other 2 patients of Group IV, the transaminase level was normal, but there was good clinical and or electrocardiographic evidence that myocardial infarction had occurred. In both of these patients, the transaminase test was performed on the second hospital day, at which one would expect significant elevation; therefore, these 2 patients appear to represent false negatives, although serial studies were not done. In all 5 patients of Group IV, only one transaminase level was determined. The following illustrates a presumptive false negative:

WF, age 72, admitted December 29, 1958, after suffering severe substernal pain for six hours' duration. Serial electrocardiograms suggested posterior infarction. A transaminase level test performed thirty hours after the onset of chest pain revealed a level of 14 units. The patient was managed as coronary occlusion and recovered.

Group V. Patients Studied for Heart Disease—Transaminase level below 40 49 units.—3 patients

These patients were as follows:

1. WF, 83 years. Diagnosed as cerebral thrombosis, arteriosclerotic heart disease with congestive heart failure. Transaminase 44 units, test run on third day of clinical illness.

2. WM, 59 years, auricular fibrillation with subendocardial ischemia. Transaminase 45 units, test run on second day of clinical illness.

3. WM, 54 years. Dissecting aneurysm of aorta. Transaminase 40 units, test run on third day of clinical illness.

Discussion: In the 3 patients of Group V, these borderline elevations are not unexpected in patients with cerebral thrombosis and brain damage, or in patients in whom centrallobular hepatic necrosis may have occurred due to chronic passive congestion of the liver.

Group VI. Patients Studied for Liver Disease. Transaminase level below 40 units.—11 patients

These patients constituted a group in which the test was used as an aid in ruling out hepatitis. Final diagnoses at time of discharge are given in Table 3.

TABLE 3
DIAGNOSES
Patients Studied for Liver Disease

Gastroenteritis	2
Pylorospasm	1
Pancreatitis	2
Pseudomucinous Cystadenoma of Ovary	1
Undiagnosed abdominal pain	2
Acute cholecystitis	1
Schizophrenia, Nausea	1
Hydrops of gall bladder	1

Discussion: In review of the records of the 11 patients of Group VI there was no other laboratory evidence of hepatic disorder. The transaminase test gave a good negative correlation with clinical and other laboratory data.

Group VII. Patients Studied for Liver Disease — Transaminase level above 50 units—13 patients (Table 4)

Discussion: In the 13 patients of Group VII we found the most striking elevations of the transaminase levels. Where

TABLE 4

Diagnosis	Number	Transaminase/Units
Viral Hepatitis	5	95, 180, 195, 650, 1410
Biliary Atresia	2	415, 450
Hodgkin's Disease With Liver Involvement	1	72
Carcinoma of Urinary Bladder, Jaundiced	1	120
Congenital Spherocytosis, Anemia, Hepatomegaly	1	66
Obstruction of Sphincter of Oddi, Cause (?)	1	450
Carcinoma of Head of Pancreas	1	220
Undiagnosed Abdominal Pain	1	55

adequate information was available, there was good correlation between the transaminase test and other liver function tests. It was noted that the transaminase test was valuable to establish an early diagnosis of viral hepatitis. It has been shown by others that the serum transaminase test is valuable in detecting subclinical cases of hepatitis and may be elevated one to four weeks prior to other manifestations.[4]

Summary

In analysis of the clinical records of 111 patients from Schumpert Sanitarium, who had serum transaminase tests performed during 1958 or January 1959, it has been shown that the test is of value in the study of patients with coronary symptomatology; especially in those patients with a clinical picture compatible with myocardial infarction, but who have equivocal electrocardiographic tracings. In these patients, serum transaminase values above 50 units aided in making the diagnosis of myocardial infarction, and values below 40 units were helpful in ruling out infarction when confusing clinical electrocardiograms were present. Likewise, in patients suspected of having hepatic disease, high serum transaminase values were helpful in establishing the diagnosis, and normal levels aided in excluding hepatic pathology.

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Discussion

Dr. W. R. Akenhead (New Orleans): We should like to begin by commending Drs. Hand and Wilson on their excellent study. It is refreshing to see the pathologist and clinician collaborating in an effort to evaluate a procedure which seems to be another valuable adjunct to clinical medicine.

I believe that we may as well get used to evaluating these types of tests because as we become more intimate with cellular chemistry and reach for the molecular level in medicine there will be more and more procedures of this variety. Two weeks ago in Chicago at the meeting of the American College of Physicians, Dr. Wroblewski mentioned about 16 enzyme levels that were being studied in liver disease.

There is little to add to Dr. Hand's presentation except to say the same thing in different words and perhaps to emphasize a point or two.

Twenty-nine of Dr. Hand's patients were diagnosed as myocardial infarction; of these, 24 had significant elevation of the SGOT. In the five with negative tests only one determination on each patient was done and in two of these the specimen was taken too early—actually prior to the infarction. In one of the other three the clinical evidence for infarction was presumptive, leaving actually only two false negatives out of the total of 26. This compares favorably with the large collected series tabulated by Clarence Agress: out of over 1200 cases of clinical myocardial infarction the SGOT was elevated in 96.6 per cent. It may be that correlation in Dr. Hand's group would have been even better had serial determinations been done. It might be added that of the reported autopsied cases of myocardial infarction in which transaminase studies had been done, only one of the 63 cases showing infarction at postmortem had had a negative SGOT.

It would therefore seem fair to say that if a suspected myocardial infarction has negative serial transaminase studies, the odds are 62 to 1 that he doesn't have it.

If the test is positive one may feel 97 per cent sure that infarction is present if other causes of SGOT elevation can be eliminated. The list of other situations that may cause elevation of the transaminase level is long, and includes: myocarditis, severe pericarditis, hemolytic crisis, lupus, gangrene, muscle injury, muscular dystrophy, central nervous system disease, and after certain drugs, notably aspirin and codeine. Although this list is long, the difficulties in clinical differentiation from myocardial infarction in most instances are not too great; and again in most instances, in these situations, with the exception of muscle and liver disease, the elevation in transaminase is not very high.

There seems no doubt that SGOT determinations are of value in liver disease; however the experience of most would indicate that the Glutamine Pyuric Transaminase or SGPT is a more sensitive indicator of acute hepatocellular disease, and the combined determination of SGOT, SPGT and the alkaline phosphatase probably gives a better profile in delineating liver disease. Alkaline phosphatase is elevated in extrahepatic

obstruction, the SGPT in hepatocellular disease. When elevation of SGOT is greater than that of SGPT, it usually means that the liver disorder is of more chronic nature, such as cirrhosis.

All of this sounds wonderful, almost like putting the numbers in the machine on one end and reading the diagnosis on the other end. Unfortunately it is not this easy. These tests are not ends unto themselves, they are still adjuncts and it is still necessary to think.

Louisiana State Medical Society

Let it not be forgotten that one of the principal objects of the Society is the advancement of State Medicine. Although its interests concern the public at large, and our profession only as members of the general public, still medical men must take the lead and most of the labor in advocating its claims, and on them rests the responsibility. It is our business then, to look after the improvement of medical education and of public hygiene; but how can this be done to any good effect without organization?

Again, the protection of the public from the dangers of quackery is properly regarded as a matter of particular interest to physicians. We consider it a great mistake to suppose that this evil is to be met with by prohibitory laws. Quackery may be outlawed, like gambling and prostitution; and, while the two latter may be driven into secret places and rendered disreputable, the first will only flourish openly, for respectable people will continue to patronize it. For its exposure and discouragement the British plan is the most effectual, and the only proper one for English-speaking people. It consists in separating properly qualified medical men into a distinct class, so that the public may be able to distinguish between them and pretenders; then the public are left free to choose between them. The plan is carried out by the organization of local branches of one grand body, styled the British Medical Association, and the publication of a register, which contains the names of all qualified practitioners, with a description of their credentials, and open to public inspection.

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Surgical Diagnosis of the Acute Abdomen*

• The differential diagnosis of the acute abdomen is often difficult, but the decision as to whether or not to operate requires even more judgment. The author gives a panoramic review of pertinent points.

MYRON A. WALKER, M. D.
Baton Rouge

THE surgical diagnosis of the acute abdomen challenges the clinical acumen of the most experienced physician, who becomes increasingly impressed with the superiority of hindsight versus foresight as experience increases.

The complaint of abdominal pain may be generalized as in peritonitis or may be sharply localized as in appendicitis. It may remain fixed at its point of origin as in ectopic pregnancy or it may radiate as in kidney or gallstone colic. Its intensity may be mild as in nonruptured peptic ulcer or excruciating as in ruptured peptic ulcer. Its character may be dull as in a splenic hematoma or it may be stabbing as in a moving kidney stone. It may be regularly recurrent as in the colicky pain of intestinal obstruction or unpredictably intermittent as in a slowly dissecting aneurysm. Its duration may be transitory as in ovulatory pain or it may be persistent as in strangulated intestinal obstruction. In addition to all of this, a host of significant digestive, urinary, gynecoid, respiratory, or circulatory manifestations may exist, or there may be a complete lack of associated subjective, objective, or laboratory clues.

The differential diagnosis of abdominal pain (Table 1) is often exceedingly difficult especially in the early stages when differentiating manifestations may be few in number. In a general way, we may say that pain is the early reaction to nonmalignant pathology, mostly infection; whereas mass or disturbance of normal physiological process is more indicative of malignancy.

Importance of Physical Examination and History

There are certain conditions such as acute pancreatitis, in which the clinical diagnosis is frequently missed because the possibility is not considered. Perhaps in no other field is it more important to take a careful and accurate history of the events preceding the onset of the disease than in the diagnosis of the acute surgical abdomen. The sequence of symptoms is much more important than the individual symptoms. The story of pre-existing attacks and the character of these attacks are often sufficient to distinguish between an acute cholecystitis and a slowly perforating ulcer of the duodenum; whereas the absence of previous attacks is more likely to suggest appendicitis.

It is also very important to weigh the present symptoms in relation to the elapsed time since the onset of the disease, because in any acute surgical problem involving the gallbladder, the duodenum, or pancreas the secondary signs and symptoms of the disease may strongly suggest intestinal obstruction owing to the secondary ileus which attends these conditions.

The posture assumed by the patient is very significant at times. The patient with a perforated ulcer remains very quiet and is reluctant to change positions. On the other hand the patient with intestinal obstruction or ureteral colic finds it difficult to remain in one position.

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

The patient with acute pancreatitis is reluctant to lie on his back and will fold the arms over the epigastric region and exert some pressure over this area.

In palpating the abdomen, it is wise to start the examination as far from the site of suspected involvement as possible and as gently as possible. Finally, the examiner should pinpoint localized tenderness by single digital pressure in the various segments of the abdomen. One should not neglect examination of the flanks for evidence of tenderness, edema or ecchymosis. In the aged it is particularly important to examine all areas where external hernias may appear. No examination of the abdomen in a patient suspected of having an acute surgical condition is complete until a rectal examination has been done and until a pelvic appraisal has been made in the female.

If one may generalize with respect to age one may say that in the very young an acute surgical condition of the abdomen will usually be due to acute appendicitis; in the middle aged group acute cholecystitis, perforated peptic ulcer, and acute pancreatitis will be the most common offenders; while in the aged, diverticulitis, malignant obstruction of the colon and, more rarely, mesenteric thrombosis will be more common.

Operation

It is very important to realize that it is much more essential to make the correct decision as to whether or not to operate than it is to make the correct diagnosis. It is obvious that the surgeon might make the correct diagnosis but make the wrong decision as to indications for operation; such an error might be very harmful or even fatal. Even if a correct diagnosis is made and a surgical indication exists an operation may not be the wise choice when a total evaluation of the patient is made. Whatever the circumstances the surgeon assumes grave responsibility when he commits himself to a diagnosis of the cause of abdominal pain. On the basis of evidence that often is incomplete, inconclusive and incapable of proof under existing conditions, an operation may seem indicated as in a case of purported appendicitis; on the other hand the policy of "watchful waiting" may seem better advised, in acute cholecystitis in an obese hypertensive female of middle age. Finally, in some cases, it may be the better part of wisdom to actively oppose operation when clinical evidence indicates that abdominal pain may be referred pain or a manifestation of angina pectoris or coronary disease. Certainly, the conscientious physician should never gloss over the complaint of "bellyache" but should make every attempt to ascertain what the proper course should be before retiring for the night or starting on his daily round of golf.

Diagnostic Evaluation of Acute Abdominal Pain

In order to properly evaluate abdominal pain one must consider the following factors:

1. The time sequence—History of onset and later development.

   Examples: The 8-hour interval from epigastric or vague abdominal distress to localized pain in the right lower quadrant in appendicitis;

   Pain before and after meals in ulcer disease;

   Upper abdominal discomfort of gallbladder disease;

   Note: By history of onset one likes to know whether pain was the original symptom, exact point of origin, radiation, constant or intermittent, and very important is the presence of associated symptoms.

2. The location sequence

   Examples: Appendicitis — epigastric to right lower quadrant.

   Gallbladder — Right upper quadrant to tip of right shoulder blade or across upper abdomen.

   Kidney pain—starting at costovertebral angle and referred to the external genitalia.

Note: It is very important to know if pain is segmental in distribution and if tenderness is associated in the same area, for example, Herpes Zoster, where we have involvement of peripheral nerve contrary to the referred pain down the left arm without tenderness in coronary thrombosis. If pain and tenderness co-exist and are not segmental in distribution but rather follow the anatomic limits of the underlying cavity then inflammation of the underlying cavity is the more likely diagnosis. By paravertebral injection of three consecutive nerves, that portion of the abdominal wall can be desensitized and any remaining tenderness will be in the abdominal cavity.

3. The character of the pain—colicky, burning, stabbing, distending and effect of motion.

Examples: Sharp stabbing pain, high in the abdomen, suggests basal pleurisy; elsewhere it may mean a stone on the move.

Burning type pain in the upper abdomen frequently means ulcer disease. Severe excruciating pain, especially that associated with rigidity, suggests perforated ulcer.

Colicky pain suggests dysfunction of a hollow viscus and is produced by some degree of obstruction. If followed by vague but shocking pain with distention, it may mean a dissecting aneurysm or mesenteric thrombosis.

TABLE 1

DIFFERENTIAL DIAGNOSIS OF THE ACUTE ABDOMEN

Consideration should be given mainly to the following:

1. Acute appendicitis	6. Diverticulitis
2. Acute cholecystitis	7. Volvulus
3. Perforated peptic ulcer	8. Intussusception
4. Acute pancreatitis	9. Mesenteric Thrombosis
5. Intestinal obstruction	10. Miscellaneous

Diagnosis of Appendicitis

So-called classical triad:

1. Pain
2. Nausea and vomiting

3. Tenderness and rigidity usually associated with fever and leukocytosis

Typical case:

1. Abdominal Pain — epigastric at first and umbilical; may be diffuse—right sided, left sided, testicle, shoulder and clavicle: usually localized in four to six hours. Cessation of pain is last call to operate.

2. Nausea and Vomiting—more frequent in children and those prone to digestive upsets.

3. Temperature—rarely over 101°F.

4. Pulse rate — Steadily rising rate is important; if over 110, suggestive of perforation.

5. Leucocytosis—Variable

6. Constipation—in 50 per cent of cases

7. Diarrhea—Confusing signs in all the age groups; ominous in the aged.

8. Appearance — At beginning not acutely ill, lies quietly, right leg flexed, facies unchanged.

9. Inspection of Abdomen—Nothing

10. Palpation — (a) Point of maximum tenderness if appendix is in contact with parietes. If low in pelvis, may get none even though on point of rupture; (b) Cutaneous hypersensitiveness (c) Rigidity—always a late sign; (d) Rovsing's sign.

Obstructive type:

Picture is more suggestive of intestinal obstruction than of acute appendicitis. Constitutional reaction—slight tenderness and rigidity may never be demonstrable.

In Aged Adults:

Previous digestive distress

Sudden attack of abdominal pain, usually localizing after a time.

Always vaguer

Nausea and vomiting

Physical signs—vague

These are some of the unusual and not altogether uncommon situations that complicate the diagnosis of appendicitis:

1. The gastroenteritis with diarrhea that masks acute appendicitis.

2. Variations in the normal anatom-

ical location of the appendix such as pelvic, retrocecal, lateral cecal, high lying positions and left-sided appendicitis in malrotations.

3. Hydronephrosis due to ureteral stone blocking the ureter.

4. Appendicitis occurring during an acute upper respiratory infection.

Note: One usually thinks of mesenteric adenitis as the probable explanation of the abdominal pain and findings. It has come to our attention that abdominal symptoms presumably due to mesenteric adenitis may respond within six hours to antibiotics to the extent that pain and tenderness are completely relieved. In appendicitis there may be some improvement but not complete relief with antibiotics. It would be well to emphasize that there is no sound evidence to indicate that antibiotics might be used in lieu of surgical measures for appendicitis.

5. Beware of missing the diagnosis of appendicitis in a patient already in the hospital for some other problem. This happens often enough to deserve emphasis. Some have suggested that the worst place to develop appendicitis is in a hospital.

6. The patient on ulcer management with calcium carbonate powders is a good candidate for a calcium fecalith which may lead to appendicitis.

7. The patient who has had a sympathectomy may not have characteristic symptoms of appendicitis or any other abdominal disease and in him the slightest suggestion of abdominal trouble should be carefully evaluated.

8. The patient with severe psychiattric disease may have any of the serious surgical conditions without providing reliable symptoms as a guide.

Diagnosis of Acute Pancreatitis

Severe upper abdominal pain which resembles that of perforated ulcer or acute gallbladder disease may prove to be due to acute pancreatitis. Serum amylase determinations may be very helpful in the differential diagnosis and if sharply elevated is practically diagnostic if seen early in the disease. However, a false positive may occur in other acute abdominal diseases such as perforated ulcer, ulcer penetrating into the pancreas, and high intestinal obstruction. A point which may cause some confusion with intestinal obstruction or peritonitis is the marked paralytic ileus which may develop and be manifest on x-ray.

Calcifications as seen on x-ray in the pancreas are usually the result of repeated attacks of pancreatitis. Occasionally following acute pancreatitis a large pseudocyst may develop and cause pressure on the duodenum.

Acute pancreatitis is more properly in the category of an acute nonsurgical abdomen in the light of present day thought.

Perforated Ulcer

The sudden outpouring of gastroduodenal contents into the abdominal cavity produces one of the most dramatic clinical pictures encountered in surgery. The signs and symptoms are so unmistakable that the diagnosis is seldom missed.

Symptoms:

1. History of previous gastrointestinal disturbance in 85 to 90 per cent of cases.

2. Severe agonizing epigastric pain (most characteristic feature). If the opening is small and the leak gradual, there may be prodromal manifestations of vague epigastric distress and the pain may then start gradually, but this is unusual. In the majority of cases the pain is sudden in onset, reaches a maximum intensity immediately and remains constant and unremitting. The patient can recall exactly what he was doing at the time the pain struck. The intense pain, one of the most severe encountered in surgical practice, is thought to be the result of violent pyloroplasm induced by peritoneal irritation. It is generalized over the abdomen but more severe in the epigastrium and right upper quadrant. Approximately 20 per cent have shoulder pain;

it rarely radiates through to the back.

3. Nausea and vomiting are inconstant and have no diagnostic significance.

4. Severe prostration is a constant feature. Sweating, abdominal rigidity, tympany over the liver, and ultimately shock, complete the clinical picture.

Pneumoperitoneum: One of the most reliable diagnostic procedures in acute perforated ulcer is roentgenographic demonstration of spontaneous pneumoperitoneum.

The presence of free intraperitoneal air, demonstrable on x-ray in a patient with previous gastrointestinal disease and evidence of peritonitis establishes for practical purposes the diagnosis of ruptured ulcer. (Pneumoperitoneum can be detected radiologically in approximately 85 per cent of patients with perforated peptic ulcer; however, the visualization of free air merely indicates that there has been a perforation of a hollow viscus, not necessarily of the stomach or the duodenum.)

Technique of x-ray examination in perforated ulcer:

1. Fluoroscopy in upright and left lateral positions.

Absence of pneumoperitoneum may occur:

1. When a small and quickly sealed perforation occurs.

2. A short interval after the moment of perforation.

3. When there is no gas in the stomach and consequently no escape of air at the time of perforation.

Diagnosis of Acute Gallbladder Disease

Acute gallbladder attacks follow a sufficiently standard pattern as to require no special remarks.

Important points: Beware of the severe attack which starts out with a high blood count (20,000 to 30,000) because of the possibility of the development of gangrene. The development of paralytic ileus of appreciable magnitude or the observation of rebound tenderness elsewhere than in the right upper quadrant are warning signs for emergency surgery.

Pancreatitis and carcinoma of the gallbladder would be markedly reduced or eliminated if every patient with gallstones had cholecystectomy done when free from acute cholecystitis, acute hydrops, empyema, gangrene, perforations with peritonitis, either diffuse or localized, stones in the common duct, jaundice, cholangitis, hepatitis, gallstone ileus, and biliary fistulas. Thus, the recognition of stones in the gallbladder, in a patient who has no contraindication to major surgical operation, is reason enough for suggesting removal of the gallbladder. When acute cholecystitis develops in a patient with gallstones, cholecystectomy done within thirty-six hours of its onset is as satisfactory a procedure as is appendectomy for acute appendicitis.

Diagnosis of Acute Gynecological Diseases

A number of conditions of the female generative tract should be taken into consideration in the differential diagnosis of the acute abdomen.

Examples are: Tubal pregnancy ruptured, twisted ovarian cyst or tumor. Mittelschmerz syndrome and pelvic inflammatory disease can also frequently cloud the issue. The female generative organs are subject to neoplasms which may undergo acute changes. Not only are the complications of pregnancy numerous, but variations in normal physiology may give rise to pain. (Table 2).

True surgical emergencies are limited to conditions which are associated with progressive, severe hemorrhage. Hemorrhage from abortion and placental separation have self evident characteristics. On the other hand, intraperitoneal hemorrhage may be difficult to dis[illegible]. It is more important to be able to recognize the signs of this cata[illegible]he than to make an exact diagnosis [illegible]its cause. Prompt action is indicated for a patient who gives a history of lower abdominal pain of sudden onset and rapid progres-

TABLE 2

GYNECOLOGICAL CONDITIONS

A. **No evidence of pregnancy:**
   1. Variants in physiologic mechanism
      (a) Ruptured follicle
      (b) Ruptured corpus luteum
      (c) Primary dysmenorrhea
   2. Inflammatory disease
      (a) Acute salpingo-oophoritis
      (b) Acute pelvic cellulitis
      (c) Ruptured tubo-ovarian abscess
   3. Neoplasms
      (a) Uterine myoma
      (b) Adnexal tumors and cysts
   4. Endometriosis

B. **Evidence of pregnancy:**
   1. Abortion
      (a) Spontaneous
      (b) Induced
   2. Extra-uterine pregnancy
   3. Late placental accidents
   4. Rupture of the uterus
   5. Neoplasms

sion, and who exhibits diffuse peritoneal irritation, abdominal distention of non-gaseous character, and signs of restlessness, pallor, "pulse hurry" and hypotension. Occasionally, a similar clinical picture may be produced by a ruptured tubo-ovarian abscess. Fortunately the initial treatment for ruptured tubo-ovarian abscess is essentially the same as that of hemorrhage.

Other Conditions

Diagnosis of Meckel's Diverticulum with Perforation—Meckel's diverticulum with perforation presents the picture of ruptured viscus with peritonitis.

Diagnosis of Acute Intestinal Obstruction—The diagnosis of acute intestinal obstruction can be made at the bedside on the basis of clinical history and examination alone, as you all know, if one is thorough. The x-ray is of great assistance, but the diagnosis is primarily a clinical one.

There is no typical symptom triad. Nearly all patients at some time during the course of an obstruction have pain, vomiting, distention, obstipation and abnormal x-ray findings. Of these, perhaps distention and obstipation can be said to occur most consistently, yet neither is diagnostic. Pain and vomiting are more prominent in small bowel obstructions. A book could be written here on intestinal obstruction but time does not permit.

Diagnosis of Perforating Carcinoma of the Large Intestine—This disease is frequently confused with acute appendicitis and presents the typical picture of the ruptured viscus.

Other Obvious Causes of Abdominal Pain

1. Strangulated or incarcerated hernia
2. Enormous incisional hernia
3. Femoral hernia
4. Umbilical hernia
5. Acute diverticulitis

"Sleepers" (Conditions that may simulate acute abdominal disease)

Of Parietal Origin:

1. Myalgia
2. Slipping rib
3. Hernia — Epigastric, umbilical or incisional
4. Herpes Zoster

Of Extraabdominal Origin:

1. Acute rheumatic fever
2. Allergy
3. Collagen Disease—
   Anaphylactoid purpura (Henoch's, Schonlein)
   Erythema Multiforme
   Erythema Nodosum
   Lupus Erythematosus
   Periarteritis Nodosa
4. Typhoid
5. Trichinosis
6. Plumbism
7. Spider and snake bite
8. Hemolytic anemia
9. Sickle cell anemia
10. Hypoglycemic crisis
11. Meningitis
12. Tabes dorsalis
13. Intrathoracic Disease —
    Pleuritis
    Pneumonitis
    Pericarditis
    Coronary Thrombosis

14. Urinary
    Ureteral Colic
    Renal Carbuncle
15. Psychogenic
    Malingerers
    Hysteria

Note: Hematuria is a "red herring" that requires careful evaluation. The hasty surgeon who cannot be bothered to wait for the urinalysis before he operates will sooner or later have cause to regret his haste.

Surgical Diagnosis of Acute Abdomen in Infants and Children

The acute abdomen in pediatric surgery is both fascinating and demanding of skill. The child cries and looks anxious but dosen't scream, while holding the muscles tense to protect the rigid abdomen. That the child is acutely ill is obvious. Whether it is or is not a surgical abdomen demands an immediate answer. One must determine whether the rigidity is due to an intraperitoneal infection or to an infection elsewhere with referred pain. While the history is of some value, the decision rests primarily upon the general and local examination.

The child with early pneumonia may have few chest findings but a rigid abdomen resembling that of peritonitis. The yielding rigidity of the abdomen in case of pneumonia is different from the unyielding rigidity of acute peritonitis.

Whenever one encounters a rigid abdomen of uncertain etiology it is wise to raise the child's head to eliminate the stiff neck of meningitis; to inquire about mumps which may be causing acute pancreatitis; to consider the possibility of early acute diarrhea which may be in the tenesmus rather than in the watery stage; to bear in mind always that respiratory infections of all kinds are notorious for producing abdominal findings. No child has appendicitis or peritonitis regardless of how textbook-like the symptoms are until one has looked in the ears and throat.

Parallel transverse ridges and furrows across the abdomen mean intestinal obstruction. They will be seen occasionally in cases of severe infantile diarrhea. Peristalsis from left to right in an infant is not diagnostic of pyloric stenosis, but nearly so.

A scaphoid abdomen with fullness only in the region of the stomach in a twenty-four to forty-eight hour infant who is vomiting bile is practically diagnostic of atresia of the duodenum.

A suprapubic swelling at once makes the examiner suspicious of an overfilled bladder. A generally enlarged abdomen suggests Hirschsprung's disease or portal obstruction with ascites. Enlargement in either upper quadrant at once suggests Wilms's tumor or a neuroblastoma.

Petechiae seen on the abdomen of a child who has abdominal pain and who has passed blood suggest Henoch's purpura and not a bleeding Meckel's diverticulum.

The three weeks' old child, probably a boy and often a first born, who has taken food well and suddenly begins to vomit all feedings but does not vomit bile has pyloric stenosis. Palpation of the tumor clinches the diagnosis.

The six months' old child who has never had a sick day in his life suddenly screams out with pain, vomits, becomes pale and limp. A few more similar episodes follow, including the passage of a bit of blood from the rectum. Light and gentle palpation will discover a sausage-shaped mass usually in the right upper quadrant or in the region of the transverse colon. A rectal examination is always in order not only to get some of the characteristic blood, but also to feel for the advancing intussusception.

If a child has passed a large amount of clotted, brick-red blood, not the usual "currant jelly," and has a mass in the abdomen, a diagnosis of bleeding Meckel's diverticulum and intussusception may be made with some assurance.

A newborn child has diminished reaction to pain and objective tenderness is below that of older children. Unless this is constantly borne in mind, one can

easily underestimate the importance of abdominal palpatory findings. The two or three day old child with atresia of the bowel has distention of the abdomen but only whimpers when its abdomen is touched. Even the infant with volvulus of the small intestine as part of the syndrome of malrotation of the bowel will not have the rigid abdomen one sees in an older child with strangulation obstruction.

Meconium ileus can be differentiated from atresia of the bowel by inspection and palpation. In case of meconium ileus the abdomen is distended at birth—not true in atresia of the bowel. Instead of the abdomen being tympanitic, it is rather firm and has a doughy feel. One usually can feel soggy masses in the abdomen; the masses are long, ropy pieces of inspissated mucoid meconium filling the lumen of the ileum.

Acute appendicitis in an infant below one year of age is rare and a correct diagnosis is an accident. Correct differentiation of acute appendicitis from an inflamed Meckel's diverticulum or mesenteric lymphadenitis is largely a matter of luck.

The one single symptom or sign most valuable, I believe, is localized tenderness. If it persists and if one can repeatedly return to this confined area of tenderness, operation is indicated.

The Roentgen Diagnosis of Acute Abdominal Conditions

X-ray is helpful in the following:

1. Acute intestinal obstruction
   (a) Mechanical
   (b) Paralytic Ileus
2. Perforated ulcer or other viscus
3. Volvulus
4. Foreign bodies
5. Urinary and gall stone calculi
6. Failure of visualization of gall bladder in acute cholecystitis.
7. Spleen—Rupture
8. Perinephritic abscess
9. Level of acute occlusion of aorta by abdominal aortography.

Summary

In summary, diseases requiring immediate operation are as follows:

I. Diseases of gradual onset and mild initial symptoms:

1. Acute appendicitis
2. Acute intestinal obstruction
3. External incarcerated and strangulated hernia
4. Unruptured ectopic pregnancy
5. Perforating lesions of the colon
6. Rupture of the gallbladder
7. Mesenteric venous occlusion
8. Perforated carcinoma of the stomach

II. Diseases of sudden onset and maximal manifestations:

1. Ruptured and leaking peptic ulcer (Formes Frustes perforation)
2. Ruptured ectopic pregnancy
3. Acute appendicitis
4. Spontaneous perforation of: An intra-abdominal viscus such as sigmoid (ca), stomach, spleen, Meckel's, gall bladder.
5. Mesenteric vascular occlusion
6. Twisted pedicle or intra-abdominal tumor
7. Rupture of an intra-abdominal abscess
8. Spontaneous intra-abdominal hemorrhage (abdominal apoplexy)

Diseases for which operation can be delayed.

I. Diseases of gradual onset and mild manifestations:

1. Acute cholecystitis
2. Acute diverticulitis
3. Acute salpingitis
4. Inflammatory masses
5. Intractable obstructing duodenal ulcer
6. Epigastric hernia
7. Regional enteritis
8. Ileocecal tuberculosis

II. Diseases of sudden onset and maximal initial manifestations:

1. Biliary colic
2. Chronic recurring pancreatitis; pancreatic calculi

Diseases with abdominal manifestations, but in which operation is contraindicated or harmful:

I. Diseases of gradual onset and minimal initial manifestations:

1. Acute respiratory infections
2. Acute enteritis
3. Mesenteric lymphadenitis
4. Ovulation
5. Rheumatic fever
6. Hepatomegaly
7. Spontaneous hemorrhage into rectus abdominis muscle
8. Diabetes mellitus
9. Malaria
10. Sickle cell anemia
11. Lead poisoning
12. Spider bite
13. Acute porphyria
14. Periarteritis Nodosa

II. Diseases of sudden onset and maximal initial manifestations:

1. Acute pancreatitis
2. Urologic causes of abdominal pain
3. Coronary Occlusion
4. Dissecting aneurysm of the aorta
5. Abdominal pain with spontaneous pneumothorax
6. Abdominal pain with Herpes Zoster
7. Gastric crisis of tabes dorsalis

NOTE: No claims are made for originality in the above paper. Material was freely drawn from standard textbooks, such as Handbook of Differential Diagnosis by Hyman; Claude Welch's Handbook of Operative Surgery; the Differential diagnosis of Abdominal Pain by Mellinkoff; Acute Abdominal Pain by Requarth; Surgical Clinics and other standard references.

Historical Notes

We do not believe that yellow fever is **contagious,** communicated from body to body—but that the cause, whatever it may be, spreads through the atmosphere, and that a certain amount of the poison in this medium is necessary for its manifestation. That its spread is not by diffusion, otherwise it would grow less and less in intensity; but that it is capable of multiplying in some way, as yet unknown to us, thereby increasing the intensity of its infection. That this atmospheric infection-tendency while greatly due to, is not wholly dependent upon heat and moisture, but that the presence of decomposing organic material and the gases arising therefrom enter largely as a factor, if not in its production, at least in its spread; and that cleanliness of person and surroundings will go far towards preventing its spread, if not securing its entire eradication.

Report of Committee, Public Health Association: New Orleans M. & S. J. 7:695 (December) 1879.

Vaginal Fungi During Pregnancy*

• Vaginal fungi have increased in incidence. In 232 pregnant women, cultures were positive in 116, of which 99 were Candida albicans.

PHILIP J. KRUPP, M. D.
M. J. ST. ROMAIN, M. D.
New Orleans

THERE is little doubt that the incidence of fungal infections of the vagina are increasing. Initially this was attributed entirely to the widespread use of potent antibacterial agents which removed competing bacteria; however, in addition subsequent studies have shown that broad spectrum antibiotics directly enhance the virulence of monilia for animals.[1] The usual yeast causing vaginitis is *Candida albicans*—a ubiquitous agent that freqently causes only minor disease such as thrush and intertrigo but under some conditions may cause major illnesses (pneumonitis, endocarditis and meningitis). This agent may also be part of the normal flora of the skin and mucous membranes. Diabetes mellitus, alcoholism, obesity, vascular stasis and profuse sweating are listed as predisposing factors.[2]

To the obstetrician and gynecologist this much neglected organism has suddenly become more important due to the increasing incidence of severe pruritis and discharge from vaginal candidiasis. This agent is more frequent in pregnancy and more difficult to eradicate because of the increased glycogen content of the vaginal epithelium as well as its increased vascularity and the occurrence of glycosuria. In the pregnant as well as the nonpregnant patient monilial vaginitis is now more frequent than that due to *Trichomonas vaginalis*.[3, 4]

* Aided by Grants from the Tulane Ex-Residents and Fellows Research Fund.

Medium and technical assistance supplied by the Research Laboratories of E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation.

Materials and Methods

This study was begun to determine the incidence of pathogenic fungi in the vaginal tract during pregnancy. Cultures were taken from the posterior fornix of the vagina of 232 pregnant patients. Nineteen were nonclinic white patients and the remainder were those colored patients reporting to the Tulane Prenatal Clinic. For this purpose Pagano-Levin culture medium[5] was used as a screening agent. This is essentially Sabouraud's media with neomycin added to inhibit bacterial growth plus a tetrazolium compound as an indicator. Tetrazolium compounds are reduced to colored formazans by the different fungi of the genus Candida. Also the intensity of this color change varies with the different species of this genus if the time factor remains constant. In *Candida albicans* this reaction is quite limited, rendering the colony a moist, glistening white or pale pink. Other members of this genus reduce the tetrazolium to a greater degree, cóloring their colonies from dark pink to red with the exception of *C. krusei*. This organism, however, differs grossly from the glistening, moist, raised colonies of *C. albicans*, since its colonies are flat, dry and wrinkled. The medium is supplied on a slant with two sterile applicators and color chart. It should be read in forty-eight hours since the color may become more intense with the increasing reduction of tetrazolium over a longer period of time.

Accordingly all our cultures were read on the second day. Those not definitely *C. albicans* were sent to the mycologic laboratory for exact diagnosis. In addi-

tion, every tenth colony read as *Candida albicans* was confirmed by mycologic tests.

Patients were also classified as to the complaint or lack thereof of pruritis and discharge. These symptoms, however, were most unreliable. It was soon obvious that many patients with a profuse leucorrhea were blithely unaware of its presence or at least its pathologic significance. Many more patients, than those admitting, actually had severe leucorrhea.

Results

The results are summarized in Table 1. It is apparent from this table that fungi

TABLE 1
RESULTS
Cultures from the Vagina of 232 Consecutive Pregnant Patients

		NO.
A.	Positive Cultures	
	1. Candida albicans	99
	2. Candida tropicalis	4
	3. Candida stellatoidea	3
	4. Candida parakrusei	1
	5. Candida (type not determined)	2
	6. Yeast not genus Candida	7
B.	Negative Cultures	
	No growth	97
C.	Contaminated Cultures	20
	Total	233*

* There was one double infection with **C. albicans** and **C. tropicalis.**

were cultured from the posterior fornix of 115 patients (53.4 per cent), and in one instance both *Candida albicans* and *Candida tropicalis* were isolated from the same specimen. Of the fungi listed *Candida albicans* definitely has proven to be pathogenic and was cultured in 42.6 per cent of patients. It is also interesting that all patients from whom *Candida stellatoidea* was isolated complained of both pruritis and discharge, while none of the four patients from whom *Candida tropicalis* was obtained complained of either.

In two instances the type of Candida could not be determined and seven patients had yeasts not of the genus Candida. Considerable difficulty with filamentous fungal contaminants overgrowing the medium was apparent. This occurred in 8.6 per cent of patients and may have obscured pathogenic yeasts.

Summary

Two hundred thirty-two consecutive pregnant patients, both clinic and nonclinic, were screened with Pagano-Levin medium for vaginal fungi. One hundred and fifteen of these patients harbored fungi in the posterior vaginal fornix and in 42.6 per cent the yeast was *Candida albicans*. The medium proved to be a simple, accurate and effective means of isolating *Candida albicans* from the vaginal tract.

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Changing Concepts in Managing Peripheral Vascular Amputees

• Choice of the level amputation deserves careful evaluation, and the authors make a plea for below the knee, which they believe is effective in most patients with peripheral vascular disease. They urge the necessity for training in the care of the stump and use of the prosthesis and give a resume of their results.

EDWARD T. HASLAM, M. D.
RUSSELL GRUNSTEN, M. D.
JACK WICKSTROM, M. D.
New Orleans

FOR many years some surgeons interested in extremity and vascular surgery have recognized that peripheral gangrene of the lower extremity could be adequately controlled in certain patients by local resection of toes or involved portions of the foot, or by amputation below the knee.[3, 4] However, twenty years ago it was a matter of policy, on the service where one of us was a house officer, to do a midthigh amputation on any patient with diabetic or arteriosclerotic gangrene in whom it appeared that removal of toes would not suffice, and amputations at the midthigh level are still being advocated in patients with gangrene secondary to diabetes,[5] or to arteriosclerosis.[2] This concept is apparently based on the premise that healing is more certain in such patients amputated above the knee, and that few of these patients could successfully manage prosthetic restitution.

Our philosophy is somewhat different. From our experience it appears that by careful selection one can restore ability of ambulation with a prosthesis in an appreciable number of these patients, and avoid major amputations in others. Although it is difficult for an elderly individual to learn to use a prosthesis many such elderly patients in a reasonable state of general health master prosthetic gait after a unilateral below knee amputation or after a unilateral thigh amputation. The same is true after bilateral amputations if one amputation is at the below knee level. It is unusual for an oldster to ambulate on bilateral above knee prostheses.

In the seriously ill patients with dry gangrene and with cardiac decompensation or other serious medical conditions which appear likely to terminate fatally within a matter of hours or a few days, amputation is seldom desirable except to relieve pain. However, in a patient without general medical conditions which would prevent ambulation, who has been ambulatory prior to the onset of their illness, and who requires a major amputation of one lower extremity, we believe that if surgically practicable it is generally wise to attempt a below knee amputation on the first lower extremity to require amputation. Healing can often be obtained at this level in the absence of a popliteal pulsation and has been obtained even in the absence of a palpable femoral pulse. Some assistance in determining whether healing may be possible at a given level may be had from the temperature and color of the skin, the location of the pain,[6] and the amount of bleeding and color of the muscles at surgery.[7] In our opinion, however, there is no completely reliable method of being certain that healing will occur at any level, even at surgery.

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

Our choice of level for amputation below the knee in this type of patient is from four to five and one-half inches below the tibial plateau. Equal length flaps are used, careful technique is essential and, as at other levels, excessive soft tissue at the end of the stump is avoided.[1] It is never desirable to cover the bone end with a "pad" of muscle.

Careful attention is given postoperatively to prevent hip and knee contractures, both on the amputated and unamputated side. General conditioning exercises are taught, stump wrapping is begun as soon as feasible and early ambulation on crutches is encouraged. If the unilateral amputee cannot walk with crutches he will seldom, if ever, be able to walk with a prosthesis. It may be possible to fit a prosthesis as early as eight weeks in favorable cases. Correct limb prescription and expert prosthetic fitting are essential. Most of these old patients need considerable training in order to walk with the prosthesis because they lack the confidence which is of assistance in acquiring agility in children and young adults. It is well in this connection to refrain from impossible goals of prosthetic achievement since these patients will definitely not run up and down stairs, or jump over obstacles. However, walking on rough ground, use of public transportation, stairs, and driving a car are taught when of value to that patient.

To attempt to evaluate the results obtained with prosthetic restoration in this type of patient we have reviewed our records of patients who were accepted for preprosthetic and prosthetic training at the Tulane University Rehabilitation Unit since June 1953. Of the 95 amputees treated there, 28 had major amputations because of peripheral vascular disease, in some cases associated with diabetes. These patients were referred to us for training, and in only a few of these had the amputation been done by us or on hospital services with which we are associated. Some had already tried to use an artificial limb without success. Many had no preprosthetic conditioning or stump wrapping and had hip or knee flexion contractures of varying degrees.

All of these were treated on an outpatient basis. Stump wrapping and exercises were begun and use of the prosthesis deferred until maximum benefit had been obtained from these measures. The details of this training do not concern us here. Of these 28 patients, 23 or 82 per cent were considered to be successful prosthetic users for their age, general condition, and level of amputation (Table 1). All of the unilateral above-knee patients could walk without a cane but several of these persisted in using a cane in spite of our advice to the contrary. Fear of falling was the reason usually given, but in some cases fear of losing financial aid from the Department of Welfare seemed a more likely explanation.

Five patients failed to complete the program (Table 2). Although the average age is higher than in the successful cases the difference is not great.

Since this group of patients had been highly selected after surgery, to attempt to determine the results of our philosophy of amputation from peripheral vascular

TABLE 1
TULANE REHABILITATION UNIT
Twenty-three major peripheral vascular amputees who successfully used prostheses.

Level	Number	Average Age	Remarks
Bilateral AK	1	71	Used walker
Bilateral BK	1	43	No canes
Bilateral AK-BK	1	60	Two canes
Below knee	4	51	No canes
Above knee	16	53	Many used a cane
Total No.	23	Average year 53	

TABLE 2
TULANE REHABILITATION UNIT
Five peripheral vascular amputees who were prosthetic restoration failures.

Level	Age	Cause
Bilateral AK	62	Not enough stamina
Bilateral BK	62	Died before receiving limbs
AK	64	Personality problems: would not cooperate
AK	49	Died before receiving limb
AK	48	Pain in other leg
Average age	57 years	

disease, the charts of all patients on the orthopedic service requiring lower extremity amputations at the Veterans' Administration Hospital in New Orleans from June 1953 to December 1958 were reviewed. There were 107 such patients of whom 73, or 68.2 per cent had a total of 104 amputations because of peripheral vascular disease or diabetes (Table 3).

TABLE 3
TOTAL AMPUTATIONS

	Toe	Ray	Trans-metatarsal	BK	AK
Arteriosclerosis	6	1	6	17	31
Diabetes	3	3	5	11	12
Buerger's	1			5	
Embolus				2	1
	10	4	11	35	44

Of these, 17 had successful minor amputations in the foot, and 56 had major amputations. The mortality for the group was 10.9 per cent (Tables 4 and 5). These deaths include all patients who

TABLE 4
AMPUTATIONS

Etiology	Patients	Deaths	
Arteriosclerosis	40	6	
Diabetes	25	1	
Buerger's	6	0	
Embolus	2	1	
Total	73	8	10.9%

died prior to being discharged from the hospital. The surviving successful minor amputees were all ambulatory to at least some extent when discharged from the hospital. Of the 50 surviving major amputees, 24 were successfully fitted with prosthesis and became ambulatory (Table 6).

TABLE 6
AMBULATORY GROUP

	BK	AK	AK & BK
Arteriosclerosis	10	1	1
Diabetes	5	2	0
Buerger's	4	0	0
Embolus	0	0	1
Total	19	3	2

Two additional patients were fitted with prosthesis but did not become prosthetic wearers. One was a below knee amputee who had great difficulty walking and in spite of a well-fitting prosthesis had repeated episodes of ulceration on his stump. The other was a bilateral with one below knee stump who went home during his training because of a business emergency and apparently preferred to remain there in a wheel-

TABLE 5
DEATHS

	Age	Cause	P. O. Time	Level of Amputation
Arteriosclerosis				
	78	Uremia	11 days	AK
	65	ASHD	30 days	AK
	56	Gangrene—right leg, shock, anuria	7 days	AK
	69	CVA, aspiration, CHF	90 days	AK
	60	Uremia, hypertension	33 days	Toe
	59	Coronary	69 days	Transmet.
Diabetes				
	64	Coronary	90 days	AK
Embolus				
	42	Pulmonary embolus	28 days	BK

chair rather than return and complete his training. The cause of this apparent loss of motivation is not known.

The oldest patient to be fitted with a prosthesis in this series was 71 years of age. Although the average of the ages of the fitted group is younger than the nonfitted (Table 7), we wish to emphasize that age is less important than general physical and mental fitness and no arbitrary upper age limit can be set.

TABLE 7
AGE AVERAGE

	All Patients	Fitted Groups	Nonfitted Groups
Arteriosclerosis	61.4	57.5	65.1
Diabetes	58.7	51.3	63.6
Buerger's	40.2	40.8	38 (1 pt.)
Average	58.9		

In this series there were 10 patients requiring bilateral major amputations. In the 56 patients requiring major amputations, a total of 85 operative procedures were done, including 8 minor and 11 major amputations which did not heal and required reamputations at a higher level. This indicates a failure of healing in 22.4 per cent. Since 42.9 per cent of the major amputees were successfully fitted with and walked with prostheses, it is our opinion that this percentage needing reamputation is acceptable, particularly since only one death occurred following reamputation.

Summary

1. A conservative approach as to the site of lower extremity amputation in peripheral vascular disease is described.

2. Our operative experience with 73 such patients requiring 104 amputations is reported. In 39 of these patients ambulation was preserved, including 24 major amputees.

3. Our experience with an additional group of 28 similar patients whose surgery was done elsewhere is reported. Of these 23 became ambulatory with prosthesis.

Conclusions

1. A surgeon should have no "routine" level of amputation in the lower extremity for peripheral vascular disease.

2. Each patient should be carefully evaluated in all respects before deciding upon a level. Some individuals would not wish to assume the risk of multiple operative procedures with consequent prolonged hospitalization and expense to attempt to obtain a stump which could be successfully fitted with a prosthesis.

3. Since many of these patients will eventually lose the other leg, a below knee amputation should be considered.

4. Careful atraumatic surgical technique is a necessity in these patients.

5. Preprosthetic conditioning, including general body exercises, special exercises to prevent contractures in the lower extremity and stump wrapping are essential.

6. Good prosthetic fitting is a necessity.

7. Training in prosthetic use should be given and supervised.

8. A surgeon and trainer should be realistic in the prosthetic function they expect these patients to achieve. Some of them may need to use a cane for extra support and some of the bilateral cases may need to use two canes, crutches, or a walker, for some activities.

9. Prosthetic training is easier and prosthetic gait is much better following successful below knee amputation than at higher levels.

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Discussion

Dr. Alfons R. Altenberg (Monroe): It has been a pleasure for me to review this paper presented by Dr. Edward T. Haslam. Surely, he has

been able to substantiate statistically the success with which conservative amputations may be carried out in certain selected cases.

The success of conservative amputations in peripheral vascular disease is based primarily on the careful selection and individualization of each case. Certainly, peripheral amputations have a greater risk and a greater morbidity. I do not feel that peripheral amputations are indicated in any patient in whom there is no hope of future prosthetic ambulation. Among the factors which determine this are irreversible disability, permanent flexion contractures of the knee, ischemic pain above the popliteal level.

If the age and condition of the surviving part is such that prosthetic rehabilitation is possible, the distal type of amputation should be attempted. Where possible, of course, amputations should be restricted to toes and through the transmetatarsal area. Some cases of Symes amputations give wonderfully long lasting results.

In closing, I feel that this presentation is timely. It should remind us not to close the door on the simpler and peripheral types of amputations in selected cases of peripheral vascular disease. The surgical technique, as pointed out by Dr. Haslam, should be simple, meticulous, and atraumatic. The selection of cases should be on the basis of complete individualization and not on a statistical basis, or on the basis of the simple diagnosis of gangrene.

New Orleans in 1879

The summer of 1879 will long be remembered in New Orleans as one of unparalleled healthfulness, and the weeping Jeremiahs of the country now find that they have been mistaken in asserting that to be unhealthy is the normal condition of this city.

The death rate for several consecutive weeks was remarkably low, and on one occasion the total deaths for a week amounted to but 68. This low rate of mortality was attained but once before in eleven years.

The summer months have been remarkably pleasant and delightful in contrast with some of the health resorts to which the residents of this city flocked. The mean temperature has been comparatively low during the months of June, July, August, and September, being respectively 88, 87, 81, 78°. Nights rendered oppressive by heat were rare. * * * These favorable conditions of our climate seem to us to play an important part in accounting for the healthfulness of our city.

* * * * The old plan of dumping garbage from the streets and gutters into vacant squares in the rear of the city has been abandoned, and a system of removal of this foul and offensive matter into barges and deposited into the Mississippi River Below the city inaugurated. The streets and gutters have as far as practicable been flushed with river water, and thorough and repeated cleansing of yards, drains, and privy vaults has been insisted on.

Editorial: New Orleans M. & S. J. 7:657 (December) 1879.

Pigmented Moles*

• A brief outline is given of the differentiation of benign pigmented nevi from those which may become malignant melanoma, and of other pigmented lesions.

WILLIAM J. PERRET, M. D.†
New Orleans

IN an attempt to choose a topic of general interest, I have selected the most common tumor of the skin.[5] Pigmented moles are found in almost every person and it has been estimated that the average number of moles per person is about twenty.[4]

Patients as well as physicians are aware of the relationship of pigmented nevi and malignant melanoma. The physician must be able to determine which of the pigmented growths on the skin are benign and can be ignored, and which are potentially or actually malignant and must be removed.

The purpose of this paper is to outline the types of pigmented nevi and their treatment and, to describe briefly some of the other pigmented lesions of the skin which must be differentiated from nevi.

The term "nevus", in general, refers to any congenital new growth of the skin. Broadly speaking it includes hemangiomas and epidermal nevi as well as pigmented moles. True nevus cells, which are oval or cuboidal cells with large pale, vesicular nuclei and homogeneous cytoplasm[2] are found only in pigmented moles.[4] In this discussion "nevus" will refer only to tumors containing nevus cells.

Junction Nevi

The junction nevus, is a circumscribed, smooth or slightly raised light brown or brownish-black macule or papule. Junction nevus is the term used by pathologists to indicate activity of nevus cells in the basal layer of the epidermis at the junction of the epidermis and the dermis. The term junction does not refer to anatomical location at the junction of skin and mucous membrane.

Most of the pigmented nevi of children are of the immature junction type. As the child grows these develop into more mature compound and intradermal nevi about which we will speak later. On the palms, soles, and genitalia, junction nevi tend to remain as such throughout life.

Junction nevi are by far the most important of the benign pigmented nevi because they sometimes develop into malignant melanoma. About one fourth of melanomas arise *de novo* and the remainder from pre-existing moles, chiefly junction nevi.[5] It is then apparent that proper handling of these lesions might prevent three fourths of all melanomas.

Compound Nevi

Compound nevi have features of both junction nevi and intradermal nevi, representing a stage of maturation of the former into the latter. In addition to the gross characteristics of the intradermal nevus, which I will subsequently describe, the compound nevus has a pigmented halo at its periphery.[1]

Intradermal Nevi

The common, mature intradermal nevus may be flesh-colored or dark brown to black in color. It may be sessile, dome-shaped or warty in appearance. It may contain hair. These nevi are more common on the face and upper trunk. These lesions are truly benign and do not ordinarily become malignant even after repeated trauma.[5]

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* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 6, 1959.

† Department of Dermatology, Louisiana State University School of Medicine, New Orleans.

Removal

Since it is usually impractical to remove all pigmented nevi from a given individual certain criteria are cited as indications for removing some of these lesions:

1. Location on the palms, soles, or genitalia.
2. Change in the quantity or distribution of pigment.
3. Loss of hair in a hairy nevus.
4. Repeated trauma such as results from shaving, and combing the hair.
5. Ulceration or bleeding. Moles in which these occur may already be malignant.
6. Increase in size.

I would like now to discuss methods of removal of pigmented nevi. This is a subject on which there is much controversy. Some believe that incomplete removal of pigmented nevi may leave scar tissue that may excite the remaining nevus cells to become malignant melanoma.[3] Others have shown by later biopsies of incompletely removed nevi that the remaining cells do not become more active because of the trauma involved in partial removal.[6]

If the lesion is obviously benign and is being removed solely for cosmetic purposes, one should choose the least destructive procedure possible. A popular practice is to shave the mole flush with the surface of the surrounding skin with a scalpel or razor blade, and then to electrodesiccate lightly the base to secure hemostasis. A satisfactory specimen can be obtained for biopsy because the critical area, the dermo-epidermal junction can be evaluated in a shave biopsy.

The punch biopsy instrument is an effective tool for doing a complete excision of small moles. Closure of the wound with sutures is not necessary and scarring is minimal.

Many pigmented nevi are removed because one believes they may be dangerous. When this is the case it is obvious that any method used should be complete. The most certain method of complete removal is surgical excision. We believe that any pigmented lesion that causes anxiety to the patient or the physician should be submitted in its entirety to the pathologist. The pathologist can then assure both that the lesion is benign or can indicate whether or not excision is adequate if the lesion is malignant.

Other Pigmented Lesions

A discussion of pigmented moles would not be complete without mention of some of the other pigmented lesions of the skin which may simulate them in appearance.

The **Ephelis** or **Freckle** is a brown macule. It is a benign condition due to an increase in activity of pigment producing cells in areas of skin stimulated by sunlight. It tends to disappear if the skin is protected from sunlight. Histologically it shows only an increase in melanin pigment in the basal layer of the epidermis.

The **Lentigo** is a smooth dark brown macule. It may occur in children and young persons, but is seen more commonly on the face, hands and forearms of elderly people. It does not disappear when the skin is protected from sunlight. It shows an increase in the number of pigment producing cells in the basal layer of the epidermis and elongation of the rete ridges.

The **Mongolian Blue Spot** is seen most frequently in Oriental and Negro infants, but occurs also in Caucasians. It is a well circumscribed flat slate blue or brownish pigmentation found usually in the sacral area, but also in other locations. It ordinarily disappears without a trace in infancy or early childhood. The pigment is in the dermis.

The **Nevus of Ota** is similar histologically to the Mongolian Blue Spot. It is located on the side of the face and often involves the sclera. It tends to progress slowly rather than disappear.

The **Blue Nevus of Jadassohn** is a flat or raised blue-black macule or pap-

ule often limited to the face or extremities. It is a benign lesion which may be mistaken for melanoma because of its color. The dermis contains long, irregular spindle cells filled with melanin.[2]

Lentigo Maligna or **Melanotic Freckle of Hutchinson**[5] are dark brown spots on the faces of elderly people. They slowly enlarge and may become malignant. If they do they form nodules which show the features of malignant melanoma on biopsy. These melanomas metastasize slowly and even then do not kill the patient as rapidly as ordinary melanomas.

Malignant Melanoma is not the subject of this discussion and it is mentioned here only to differentiate it from benign pigmented nevi. It shows the features that one does not expect to see in a benign mole, such as nodules in a previously flat lesion, irregularity of pigment, satellite tumor formation and ulceration.

There are other lesions, only incidentally pigmented, which may look like moles.

Seborrheic Keratoses are yellowish or brownish, sharply demarcated, greasy, warty growths, usually seen on the face and trunk of older persons. They are benign basal cell papillomas. In Negroes small dark papules with an identical histologic picture are called **Dermatosis Papulosa Nigra.**

Histiocytomas are hard, skin-colored, dark brown or black nodules within the skin itself. They are also called dermatofibromas, hard fibromas or sclerosing hemangiomas. They are benign and may be left alone if recognized as such or they may be conservatively excised.

Pigmented Basal Cell Carcinoma shows the usual features of basal cell carcinoma plus pigment which may give it the appearance of a pigmented nevus on superficial examination.

Senile Keratoses are red scaly patches or papules on exposed areas of the skin of older persons. They are sometimes pigmented or colored from hemorrhage.

Common Warts may look like pigmented moles if they have been irritated and contain blood.

Pyogenic Granulomas are red, friable, pedunculated tumors that result from trauma. They are composed of capillaries and inflammatory cells. At times they resemble melanomas so closely that biopsy is necessary to establish the diagnosis.

Summary

The clinical features of pigmented nevi have been reviewed. Changes in these lesions which have been cited as criteria for their removal have been discussed. Several other pigmented growths of the skin which must be differentiated from nevi have been described.

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Discussion

Dr. V. Medd Henington (New Orleans): I would like to congratulate Dr. Perret on his very excellent presentation. He has covered the subject of pigmented moles very thoroughly in the time allotted, and I shall emphasize some of the points which he has brought out.

Dr. George Pack and his group at the Memorial Hospital, after counting the nevi on many thousands of patients, arrived at the conclusion that there are 14.6 nevi per person in the United States.

If one takes the population of the United States as 180,000,000, then we can quickly arrive at the fact that there are two billion 682 million moles at this moment on people in this country.

Now obviously, it is not necessary or practical to remove any or all nevi on all patients. Therefore I shoul like to limit my discussion to which nevi should be removed; when should they be removed, and how should they be removed.

I believe that a physician should have many

modalities at his command, and should not use any one method in removing all pigmented moles which present themselves. For instance: one might remove a junction nevus a bit differently than one would remove an intradermal nevus. On the other hand, one might remove a compound nevus on the sole of the foot a bit differently than one would remove the same type of nevus from the glans penis. One would probably remove a compound nevus from the face of a young blond-headed girl a bit differently than one would remove the same type of nevus from the face of a sixty-year-old farmer.

Among the many questions asked, by patients, of me and I am sure that you are confronted with exactly the same questions are: Doctor, what is this little spot? Is this malignant? or can it become malignant? Does anything have to be done about this lesion . . . if not, can anything be done about it for cosmetic reasons? . . . and many other questions of this type.

All moles, whether they be pigmented or nonpigmented, should be removed if first, they are undergoing changes or show definite signs of activity. By signs of activity, I mean certain enlargement, bleeding, inflammation, alteration in color (either becoming darker of lighter) ulceration crusting, development of satellite pigmented areas or these moles which become pruritic or painful. Second, those moles which show any activity during pregnancy should be removed. Third, all junctional nevi should be removed and fourth, all nevi on the soles of the feet, the genitalia or the palms of the hands.

We know, from a vast amount of clinical and laboratory information, that the moles which become malignant are either the junctional or the compound nevus. The intradermal nevus, for all practical purposes, never becomes malignant. However, one cannot always tell by examination of the lesion just what type of nevus it is. As a general rule the junctional nevus is a light brown to black color and it is flat or very slightly raised above the skin. One should remember that junctional nevi tend to become intradermal nevi with increasing age. Nevi which have junctional elements, that is, the junctional nevi and the compound nevi are generally accepted as being potential precursors of malignant melanoma.

Junctional nevi are best removed by surgical excision. Compound nevi can either be surgically excised or can be excised flush with the skin so that one might have a section for pathological examination and then electrodessicate it. The intradermal nevi can simply be dessicated flush with the skin and allowed to heal with very little scar formation. I would condemn the use of electrolysis for the treatment of all pigmented nevi. I would be equally objectionable to the use of refrigeration with carbon dioxide snow or liquid nitrogen, or the removal of nevi by dermabrasion.

Perhaps the most confusion exists by the term juvenile melanomas. I have seen very destructive surgery result from such a pathologic report. Juvenile melanomas are simply junction nevi occurring before the age of puberty. Junctional nevi in the juvenile period do become malignant melanomas rarely. If I remember correctly, McWhorter was only able to find four cases of malignant melanomas in children before the age of puberty in the files of the Mayo clinic, which attests to the rarity of this condition. When one receives a pathological report of juvenile melanoma, one should further study the section and if he is convinced that it is a benign lesion, it should be treated exactly as all junctional nevi are treated; whether they occur in children or adults. However, if this lesion is a malignant melanoma then it should not bear the title juvenile melanoma, but should be reported as malignant melanoma, regardless of the age of the individual, and then should be treated as such.

Louisiana State Medical Society

The annual meeting of this body, which will take place in the last Wednesday in March, is so near at hand that a few remarks a propos of the occasion may not be inappropriate. Nearly all the States of the Union, including the most recently settled, have similar organizations, and their utility is no longer a matter of question, outside our own borders. In Louisiana, however, as regards the great majority of the medical profession, the matter seems either to be decided in the negative or to be still unsettled, from the evidence afforded. The number of local medical societies is so small that it was found impracticable to organize the State Society as a representative body; while its individual membership throughout the State is only 106 altogether, out of 876 practitioners whose names have been reported.

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Editorial

Poisons Should be Properly Labelled

The danger from poisons that may cause injury or death is increasing. There are now a quarter of a million trade name chemical products on today's market for use in the home and in industry. These products may or may not contain substances which are injurious to those who come in contact with them. Without proper labelling there is no way for the users of these products to know of the possible hazards, and without this same knowledge there is no way for those who have custody of others to protect the ones under their charge. The medical and pharmaceutical professions have been advocating for a century that such products should be labelled in such a way as to be helpful. After about fifty years of discussion, the federal Caustic Poisons Act of 1927 was passed, which covered chiefly caustic and corrosive substances. In 1938, the Federal Food and Drug and Cosmetic act was passed, which beside regulation of foods and drugs, made some provision for chemicals. In 1947, the Federal Insecticide, Fungicide and Rodenticide Act was passed, covering a group of economic poisons.

In the past ten years, the Committee on Toxicology of the American Medical Association has been continuously active in studying the situation, and has developed a legislative plan to cover the great number of products which are hazardous, and for which regulation and labelling is not provided in the legislation mentioned above. The Committee on Toxicology has formulated a statute to provide uniform regulations and the precautionary labelling of household commercial, and industrial chemical products. The bill introduced May 25, 1959, by Mr. Curtis of Missouri, entitled "Uniform Hazardous Substances Act," is HR 7352 of the Eighty-sixth Congress. This bill is intended to serve not only the public, but also, the affected industries, since it encourages uniformity, and is sufficiently broad to assure complete coverage of all classes of chemical products.

A companion bill in the Senate is S 1283 and is before the Senate Committee

on Interstate and Foreign Commerce. The indications are that these bills will be acted upon during the current session. Their importance to the unknown thousands who would be spared suffering and possible death by the enactment is incalculable.

It is estimated that there are over six hundred thousand cases of poisoning requiring medical care each year. Fourteen hundred and fifty deaths were reported in the United States last year by poisoning from agents other than poison gases and spoiled food. Over four hundred of these deaths were children under five years of age. Reductions in these totals would be greatly helped if labels contained statements as to the contents, its dangers, and possible methods of treatment.

These proposed laws, as in the past, met serious opposition from the vested interests. There were efforts in various quarters to amend the bills restricting their scope of authority, which would actually only duplicate the effect of laws already in force. The Senate Interstate and Foreign Commerce Committee voted out a measure that exempted food, drugs, and cosmetics from the provisions of the proposed bills. Representatives from the manufacturers and sellers of patent medicines had objected strongly to the inclusion of drugs in the bill. Aside from these, other manufacturer resistance to legislation is based upon a number of reasons. Companies feel that warning labels will frighten the public and cut the sale of products. Others hesitate to list the contents because of fear that competitors will profit from the information.

The first of these objections is not borne out by experience as is shown in the descriptive labelling of drugs. When people found that they could read the contents of the drugs on the bottles they felt greater security in using them. The fear that trade secrets would be lost through the declaration of hazardous ingredients is ill founded because most well-informed competitors probably already know the contents of each other's products. The argument that industrial and commercial substances do not need labelling, because they are generally used in work under the direction of a competent supervisor, does not cover the subject. The type of management which provides protection in the use of dangerous chemicals is found in large plants with rigid systems. Such supervision would not exist in two thirds of our four and a half million business enterprises, which are retail trade establishments, stores, and service organizations.

The effort to restrict the laws to substances destined for household use only would leave unprotected the great mass of the working public, who come in contact with the various hazardous substances.

The proposed law provides for proper animal toxicity tests as the means of establishing the danger in a more or less quantitative fashion. The argument that such a requirement would tax the capacities of the available laboratories is not valid as the choice is between human suffering on the one hand and corporate profits on the other.

The laws further provide for proper identification and warning signs for strongly sensitized chemicals which cause an allergic inflammatory reaction in living tissue on contact. This is a desirable feature because signs are understood, and would guide a great segment of the population who would not read labels.

These proposed bills represent many years of investigative work and constructive legislative effort. The American Medical Association, through its Committee on Toxicology is attempting another important step in preventive medicine. It is to be hoped that such measures as these will not be weakened to the point of becoming ineffective through the action of vested interests. The influence of the medical profession should be exercised in behalf of this legislation.

Guest Editorial . . .

Watch Out!

It is quite possible the powers that be in Washington have more than one reason for complaining about prices of drugs. Senator Estes Kefauver's drug price investigating subcommittee would have us believe that the government's sole interest is "simply with the price of drugs — a price which must be paid by someone under any system of medical care". I think there is a psychological reason which they hope to keep under cover. This Senate antitrust investigation is just another cunning approach in the attempt to slip socialized medicine in at the back door. It appears to me that Mr. Kefauver almost gave this fact away in his opening statement when he said: "It is not the purpose of these hearings to question in any way the American system of private medical practice." I react to this statement in the same manner I would if a small boy should rush into my office and exclaim: "Doctor, someone batted a baseball through your back window—and I don't want you to think that I did it."

If these investigators' thoughts were just in the drug field, they should also be concerned about the quality as well as price. They certainly have shown a lack of interest in the cost of pharmaceutical research and manufacturing, and without research drugs would soon degrade in both quality and quantity. The Senator's line of reasoning in advocating that druggists be allowed to use generic instead of brand names, would throw the drug business into a tail spin within a short time. If one company spends a million dollars to produce a new drug, and another concern is allowed to copy the formula, pay none of the research cost, and market the product at a low price, the results would be disastrous. The better firms would go broke, initiative to find new drugs would be smothered and we would find ourselves advancing in reverse—back towards the "calomel and castor oil days".

I feel that these governmental probes are motivated, primarily, for publicity. If they can attract enough attention by their investigations of the major drug manufacturing firms, and lead the American people into believing that the prices of drugs are too high, it might be possible to gain a large number of sympathetic listeners.

They hope to stir up enough interest in the drug controversy to swing the spotlight away from the doctors for a while, give us a breathing spell, make us feel complacent and lessen our vigil against legislation like the Forand bill. It is their wish that we don't get wise to their twofold purpose of these investigations in relation to the Forand bill itself. First, they will attempt to convince the lay public that older people, on social security, will not be able to pay the high drug prices—and that the government should step in to help. Second, if these tactics could get a Forand type of legislation passed without enough medical publicity to stir up strong opposition—they would be in position to widen social security to cover everybody. Then we would have socialized medicine under another name.

People, consciously, or unconsciously, associate drugs and physicians together. An aroused populace against drug prices would not be too friendly towards the medical profession. Such a situation would gain recruits for a more effective battle against the free practice of medicine. While we sit on the side lines, apparently unmolested, and watch the steam roller attempt to crush the drug firms, we must remain alert. We could get caught napping like Hitler did one time during World War II—when the Allied soldiers were issued heavy, long-handled underwear. As soon as the Germans got

wind of it, they rushed up to Norway while our troops poured into Africa. It behooves us to watch out for all sorts of misleading tactics, because this drug battle is only a sham attack. The medical profession is their chief objective. They hope to find time to reorganize their forces, turn upon us without warning and launch a surprise attack where and when we might least expect it.

F. Clyde Bedsaul, M.D.

Floyd, Va.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF THE PRESIDENT

During the twelve months I have had the honor and privilege of serving as President of the Louisiana State Medical Society, many important events have transpired and much useful work has been accomplished.

I would like to open this report by paying full tribute to the Society officers, committee members, staff personnel and others without whose help this progress could never have been realized.

Perhaps the most significant project in which the Society participated during the past year has been the campaign to combat passage of the so-called Forand Bill which would extend social security benefits to include hospital and medical care. This insidious legislation, which is nothing more than a step in the direction of the complete socialization of professional medicine, has been singled out as one of the most damaging proposals ever to confront the public health and the medical profession.

Following the leadership of the AMA, your President and the officers of many component medical societies from various sections of Louisiana met in Alexandria to receive a thorough briefing on the Forand Bill and to plan a statewide campaign against it. After this meeting, many parish and district societies embarked upon a successful "grass roots" campaign to obtain thousands of letters from private citizens and various organizations, all directed to Louisiana Congressional representatives and expressing their opposition to the Forand Bill.

Representatives of the AMA, assisted by the Secretary-Treasurer and our Public Relations Counselors, made journeys to various parts of the state to address component societies on the subject of the Forand Bill and to rally their support. At this writing, the Forand measure has not yet come up for debate in Congress. However, we are confident our activities here in Louisiana, combined with those of state and component medical societies in other parts of the country, will be successful in convincing our representatives and senators that this highly dangerous legislation should be soundly defeated.

Much time, thought and effort have been devoted during the past year to the campaign to combat cultists and to protect the public against the various forms of cultism and those who seek to practice medicine without a license. A leading contributor to this campaign, once again, has been Dr. C. E. Boyd, of Shreveport, whom I wish to single out for special recognition for his untiring diligence and work. The manual on cultism which Dr. Boyd prepared some time ago has been completely re-written and brought up to date. This is probably one of the most complete publications on cultism ever assembled and it will continue to be of invaluable help in the campaign against the cultists here in Louisiana and elsewhere throughout the United States.

This being a legislative year, we are once again marshalling our forces to maintain the status quo of the Louisiana Medical Practice Act, and encourage all physicians to get behind us in this effort by contacting their legislators and insisting that they fight strongly against any efforts of the cultists to gain legal recognition in Louisiana.

As usual, during the political campaign in Louisiana earlier this year, a small group of Society members won respect and commendation for lending their support to certain candidates

who were favorably inclined toward the policies of the Society in regard to the Medical Practice Act.

Recent legislative proposals on both state and national levels have demonstrated the importance of the formation of an organization of physicians, **completely and legally independent of the Louisiana State Medical Society**, which could serve as a political action group for the profession. Such an organization would be able to be more effective and stronger than individual physicians in supporting political candidates friendly to the profession. Organizations of this type have been successful in other states.

Our campaign against the cultists this past year extended into the Federal courts where the Society was made an intervenor with the Louisiana State Board of Medical Examiners who were sued in an action contesting the legality of the Medical Practice Act. This subject will be gone into in detail in the report of the Louisiana State Board of Medical Examiners.

I am very grateful to the American Medical Association for their invaluable help and guidance, and to the AMA representatives who visited Louisiana on a number of occasions during the past year. These include Dr. F. J. L. Blasingame, Mr. Tom Hendricks, Mr. Aubrey Gates and Mr. Charles Johnson who helped greatly in the planning and execution of the anti-Forand campaign.

The AMA also deserves our thanks for co-sponsoring with the Louisiana State Medical Society and the state medical societies of Texas, Arkansas, Mississippi and Alabama the regional Conference on Aging in New Orleans. Your President had the honor of serving as moderator for the opening session of the conference and Dr. O. B. Owens, your President-elect, was moderator for the closing session. The conference elicited front page stories in the newspapers on the aging problem and what professional medicine is doing to meet this challenge.

The American Medical Education Foundation received strong support from Society members during the past year and we encourage your continued support for this worthy and important cause in the years that lie ahead. With the cost of medical education constantly on the rise, our young medical students are in need of all the support the profession can give them.

We are gratified to report that there has been a growing recognition among Society members toward the importance of maintaining membership in the American Medical Association, and I encourage all State Society members, who do not yet belong to the AMA, to join at the earliest possible moment. Your State Society, with only a few additional members joining the AMA, will be qualified to have three instead of two delegates in the AMA House of Delegates.

Your Society is very grateful for the help it received in its many endeavors from the Woman's Auxiliary, and the Auxiliary officers led by Mrs. J. T. Willis, President. At present there are approximately 750 State Society members whose wives are not members of the Auxiliary.

These doctors should encourage their wives to join the Auxiliary and to participate in its activities. A good way to do this is for the doctor to submit application and dues for his wife to the Auxiliary. By increasing the membership of the state Auxiliary, we will automatically increase the number of delegates to the AMA Auxiliary.

"Medical Progress" at the Louisiana State Fair last Fall was again an outstanding success in our continuing effort to educate and inform the public as to the various phases and facets of professional medicine. This most recent "Medical Progress" attracted several hundred thousand visitors over a ten-day period and was the subject of several articles in the Shreveport newspapers. The Shreveport Medical Society, which co-sponsored "Medical Progress" with the Louisiana State Medical Society, deserves our praise and recognition for their assistance. We are also very grateful to the various component medical societies which sent representatives to Shreveport to assist in staffing the exhibits during the time the Fair was in progress. It is our belief that "Medical Progress" is one of the most important public relations projects of the Society and has certainly proven its value during the three years we have pursued it as a Society function.

Acting on the authority of the Executive Committee, a new contract was executed during the past year restoring practically all the benefits which had been omitted during the previous year from the Medicare program.

The mutual problems of doctors, nurses and hospitals were discussed at a joint meeting of State Society representatives and representatives from the Louisiana Nurses Association and the Louisiana Hospital Association held during the past year. As a result of this meeting decisions were reached on several important areas of action.

This has been a year of travel for your President. Included in my record of journeys have been trips to visit medical societies in New Iberia, Lake Charles, Shreveport and a number of other communities. Other trips were made to attend "Founders Day" in Alexandria, the special Forand Bill conference in Alexandria, the Medical Progress exhibit at the Louisiana State Fair in Shreveport, the annual convention of the Louisiana Academy of General Practice in Baton Rouge, a meeting of the Committee on Public Policy and Legislation in Baton Rouge and to Atlantic City and to Dallas, Texas for meetings of the AMA. Also, your President attended meetings of the Orleans Parish Medical Society, the aforementioned meeting of hospital and

nursing groups, the Conference on Aging and a meeting of the New Orleans Dental Society.

Along with Dr. Philip H. Jones and Dr. Hugh T. Beacham, your President participated in a conference with Mr. Basil O'Connor, Executive Director of the National Foundation, at which time Mr. O'Connor explained in detail the new aims and purposes of the National Foundation. My impression is that the Foundation intends to enter the practice of medicine in a big way, covering every type of physical defect, malady and disease.

As stated at the beginning of this report, the administration of any President of the Louisiana State Medical Society can be no more successful than the support he receives from his officers, committee members, members-at-large, the office staff and special consultants.

Whatever accomplishments the Society has realized during the past year are directly traceable to the cooperation and assistance I have received from many people, including your Past President, Dr. Arthur Long; your President-elect, Dr. O. B. Owens; the Editor of the Journal, Dr. Philip Jones; Miss Annie Mae Shoemaker and her highly efficient staff of assistants at State Society headquarters; our Legislative Consultant, Mr. Percy J. Landry, Jr. and our Public Relations Counselors, Mr. Paul Perret and Mr. Paul Kalman.

I also wish to thank the chairmen and members of our various committees and councils for the work they accomplished, and the members of the Executive Committee for the many hours they expended in attending meetings and working on the affairs of the Committee.

Last but far from least, I wish to express my unbounded gratitude to Dr. C. Grenes Cole, Secretary-Treasurer, for his tolerance of my many mistakes and shortcomings while serving as President of your Society. Without Dr. Cole to help me, I truly would have been lost.

In closing, I most humbly thank the Society itself for allowing me the privilege of serving as your President.

Recommendations

1. The Society continue to support and maintain the liaison group which has been established with the Louisiana Hospital Association and the Louisiana Nurses Association.

2. All socialistic types of legislation (e.g., the Forand Bill) be vigorously fought by every Society member interested in maintaining his freedom.

3. Society members give their active support to the Smathers - Morton - Keogh - Simpson Bill which, at this writing, is being closely watched.

4. The Society continue and expand its sponsorship of Medical Progress exhibits at the Louisiana State Fair as this has proved to be one of the most outstanding and successful positive public education projects in which the medical profession in Louisiana has ever participated.

5. The Society continue the services of our Public Relations Counselors and Legislative Consultant who have performed such valuable work during the past five years.

6. Society members be encouraged to increase the scope of their contributions to the American Medical Education Foundation.

7. All eligible non-members of the AMA be encouraged to join, and copies of our new brochure, explaining the benefits of membership, be circulated among these doctors.

8. Each member of the Society whose wife is not presently a member of the Woman's Auxiliary pay her dues ($1.50 per year), thereby enrolling her in the Auxiliary; also encourage their wives to take active part in the work of the Auxiliary.

9. The Society continue to support the Louisiana State Board of Medical Examiners in every possible way in the campaign to protect the Medical Practice Act.

10. The Society give careful study and consideration to the work of the National Foundation before any type of official approval or recognition is given to the Foundation.

11. Society members begin work on organizing an independent group of physicians for political action; membership in this organization to be completely voluntary and legally separate from the State Society.

W. ROBYN HARDY, M. D., President

HEALTH LEVELS AND INCOME AMONG THE STATES

The following is a complete report from the Health Information Foundation on "Progress in Health Services," which appeared in their March 1960 issue. We feel that the information on "Health Levels and Income Among the States" should be of interest to all our members.

Marked improvements in health, indicated by substantial reductions in mortality, have occurred in the United States since earlier in the century. But although all states and probably all other major population groups have shared in this improvement, the extent of the reductions has been quite varied.

In general the declines in mortality have been greater where the levels of mortality were initially higher, so that the differentials between states and population groups are now narrower than formerly. This has been the case, for example, for states with low average per capita incomes, where mortality was relatively high. Today their overall mortality level is virtually identical with that in the upper-income states.

However, this overall similarity in mortality rates is the product of contrasting ratios at each end of the age scale. For example, the low-income states have poorer mortality rates than the high during infancy, the younger ages, and even the

adult ages. At ages 45-64 this holds true to a relatively minor extent, but at 65 and over the record is better in the low-income states. In addition, the ratio of mortality rates in the low- to those in the high-income states varies by cause of death, although in many instances the differentials are now narrower than in former years.

These findings are derived from a survey by Health Information Foundation of the relationship of mortality to gross differentials in economic level among the states in the U.S. This approach represents one alternative, essentially aimed at the same problem, to the customary method of determining economic or "social class" differences in health by comparing the mortality patterns of persons in various groups of occupations. Unfortunately, no completed studies of occupational mortality are available for any large area in the United States for any year later than 1930. In contrast, the study reported in these pages not only employed current data, but was able to derive trends by comparing current statistics with those of former years.

In this study the mortality patterns of the 10 states (including the District of Columbia) ranking highest in average per capita personal incomes were compared with the records of the 10 lowest states. The compositions of these top and bottom groups have varied somewhat over the years, and this analysis used separate groups of states in specific years, as required, for which to derive mortality rates. The years covered were 1930, 1940, 1950, and 1957. The income figures used in selecting the states were those compiled and published by the Office of Business Economics of the U. S. Department of Commerce. Mortality rates were computed from published reports of the U. S. National Office of Vital Statistics.

In the high-income group, these eight states ranked consistently among the top 10 in each of the years covered: California, Connecticut, Delaware, District of Columbia, Illinois, Nevada, New Jersey, and New York. Each of the following five states also were included in the top 10 in at least one of the four years: Massachusetts, Michigan, Ohio, Rhode Island, and Washington. Similarly, the bottom 10 included the following during each of the four years: Alabama, Arkansas, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. It also included these at least once: Louisiana, New Mexico, North Dakota, South Dakota, and West Virginia.

The high-income group in all years consisted to a large extent of the most highly industrialized and urbanized states, especially those in the Northeast. But it also included some from the Middle and Far West. The low-income states, on the other hand, were generally (but not exclusively) in the South, much more rural in character and with large nonwhite populations.

Although the groups at each end of the income scale included a stable core of states, there was nevertheless some shift in rank order within both the highest and the lowest 10. Also, the range of difference in average per capita incomes between the highest and lowest groups narrowed between 1930 and 1957. Thus the average per capita income figure for the top 10 was over three times as high as that for the bottom in 1930, but less than twice as high in 1957.

The high-income states enjoyed superior health facilities and resources during these years, but the extent of their advantage and its trend varied for specific facilities. For example, the differential in hospital beds narrowed. The high-income states in 1935-37 reported over 2½ times as many nonfederal general and special hospital beds per capita as did the low-income stakes, but by 1957 the comparable ratio was only 1¼. The ratio of high- to low-income states in physicians per capita rose from 1.7 in 1930 to 2.1 in 1940, but dropped to 1.9 in 1950 and to 1.8 in 1957. For dentists per capital, the ratio of high- to low-income states dropped from 2.9 to 1930 to 2.2 in 1958.

The superior health facilities in the top-income states were reflected to only a small extent in the overall mortality rates in 1930 and almost not at all since then. Thus in 1930 the age-adjusted mortality rates of the low-income states, 1,400 per 100,000 population, exceeded the comparable rate of the high-income states, 1,240 per 100,000, by 13 per cent. But the excess in rate of the low-income states dropped to 7 per cent in 1940 and 5 per cent in 1950. By 1957 deaths per 100,000 were 842.2 for the low-income and 837.5 for the high-income states, a difference of less than 1 per cent.

Patterns of mortality by age

Trends in the patterns of mortality by age have varied considerably from the overall trends. Today at ages under 45 mortality rates are generally higher in the low-income states; at 45-64 there is almost no difference; while at 65 and over mortality rates are higher in the high-income states.

In infant mortality rates (death under one year per 1,000 live births), a measure of health traditionally considered a sensitive index of environmental conditions, the differential between these groups of states has narrowed since 1940, although a substantial differential still exists. In 1930 the infant mortality rate in the low-income states averaged 74.2, an excess of 27 per cent over the comparable 58.3 in the high-income states. By 1940 the *rate* in both groups of states had dropped considerably, but the decline was less rapid in the low-income states, and their relative excess over the high-income states actually rose to 50 per cent. But by 1950, again with the rates in both groups of states declining, the

excess had dropped to 38 per cent and by 1957 to 24 per cent, or near the 1930 level.

The low-income states also exceeded the high in the components of infant mortality—i.e., in neonatal mortality rates (death of infants under one month) and post-neonatal rates (second through twelfth months, gnerally less influenced by "biological" factors and more sensitive to the "environment"). Thus the excess neonatal mortality in the low-income states rose from 18 per cent in 1930 to 29 per cent in 1940, then dropped back to 18 per cent in 1950 and to 10 per cent in 1957. For post-neonatal mortality the comparable per cents of excess mortality in the low-income states were 40, 94, 95, and 68.

At ages 1-24 and 25-44 the excess in mortality rates in the low-income states was large in 1930, but as mortality declined sharply in both groups of states the differential was reduced somewhat. At ages 1-24 the mortality rate in the low-income states was 372.0 per 100,000 in 1930, or 38 per cent above the 269.3 of the high-income states. By 1957 the comparable figures had dropped to 94.1 and 73.1, respectively, an excess of only 29 per cent. At ages 25-44 a similar reduction in the rate took place, and here the differential narrowed from 50 to 32 per cent.

At the middle and upper ages, however, these trends were not repeated. For mortality rates at ages 45-64 the very slight differential of only 4 per cent in 1930 in favor of the upper-income states remained remarkably stable; in 1957 the figure stood at 3 per cent. The mortality rates themselves in both groups of states were substantially reduced from 1930.

In contrast, the reduction in mortality rates since 1930 at ages 65 and over, while relatively small, was larger among the low-income states. As a result, the former small excess in mortality at these ages in the low-income states was reversed: By 1957 mortality rates at age 65 and over in the low-income states were only 90 per cent as high as those in the upper-income states.

Leading causes of death

The changing relationship of mortality in the low- and high-income states has resulted largely from the general decline of communicable diseases as leading causes of death. These diseases, once primarily responsible for the higher mortality rates in low-income states, have since been replaced as leading causes of death by heart disease and other major cardiovascular-renal conditions and by the malignant neoplasms (cancer). Many of these latter conditions are often far more prevalent in high-income states.

However, a trend of reduction in differentials has also been evident (although to a lesser extent) among many of the more important causes of death. In some instances causes that had lower rates in the low-income states in 1930 increased more rapidly there than elsewhere. As a result, mortality rates from such causes in the two groups of states were much closer to one another in 1957 than they had been previously.

For example, diseases of the heart, with 296.9 deaths per 100,000 in 1930 in the high-income states, had a rate of only 211.0 in the low-income states, 71 per cent of the upper figure. Since then mortality from this cause has risen throughout the country, but at a faster rate in the low-income states; and the differential has therefore decreased. In 1957 diseases of the heart accounted for 338.5 deaths per 100,000 in the high-income states and 290.7 in the low, so that the ratio of low to high had risen to 86 per cent. For arteriosclerotic heart disease the comparable rise was similar, from a ratio of 55 per cent in 1930 to 72 per cent in 1957.

A somewhat similar trend held true for mortality from malignant neoplasms (cancer). In 1930 cancer (all forms) caused 133.2 deaths per 100,000 in the high-income states and 78.8 in the low, or only 59 per cent as many in the latter. Between that date and 1957 the rate in the high-income states, 144.2, rose relatively little, but mortality in the low-income group climbed to 110.6. As a result, the 1957 ratio of mortality in low- to high-income states rose to 77 per cent.

In mortality from cancer of the digestive system, the comparable ratio of rates in the low-income states to the high also rose, from 50 to 67. The ratio rose especially sharply, from 27 to 70, in mortality from cancer of the respiratory system, and somewhat less sharply in leukemia and aleukemia, from 49 to 82 over these years.

The pattern for diabetes mellitus resembled that for heart disease and cancer in that here, too, the gap between mortality rates in the low-income and high-income states narrowed. In 1930 mortality rates from this disease in the low-income states were only 57 per cent of the high, but by 1957 the ratio had risen to 80.

Another example of this type of convergence is suicide. In both 1930 and 1957, this cause of death occurred less frequently in the low-income states than in the high. But while suicide death rates declined in both groups between 1930 and 1957, the decline was sharper in the high-income states and the ratio of suicide mortality rates in the low-income states to those in the high increased from 59 to 91.

For one leading cause of death, influenza and pneumonia, the ratios converged only after 1940. In 1930 death rates from this cause stood at high levels in both groups of states—99.2 per 100,000 in the high-income states and 133.6 in the low—an excess of 35 per cent in the latter. By 1940 mortality rates in both groups of states had dropped, but the excess mortality in the latter group rose to 87 per cent. Nevertheless, the excess was down to 56 per cent in 1950 and to only 17 per cent in 1957.

For tuberculosis the convergence was much less

definite. Mortality from this disease in the low-income states in 1930, 100.2 per 100,000 population, exceeded the comparable rate in the high-income group, 71.3 per 100,000, by 37 per cent. But the excess dropped to 35 per cent in 1940, 34 per cent in 1950, and then to 32 per cent in 1957. The rates by this time were down to 9.5 and 7.2, respectively.

Similarly, homicide death rates were 18.4 per 100,000 in the low-income states in 1930 compared to 6.3 in the high-income states, or nearly three times as many. Although the rates in both places were much lower by 1957, 9.0 and 3.4, respectively, the ratio between them continued at nearly as high a level as it had been formerly.

Rates from another leading cause of death, vascular lesions of the central nervous system, fluctuated in the low-income states at about one-third above those in the high-income states between 1930 and 1957. Although the mortality rates in both groups of states dropped during these years, the per cent of decline in both were roughtly similar.

Finally, among the leading causes of death, the differential for accidents (all forms) changed directions between 1930 and 1957. In 1930 the mortality rate from accidents was 82.4 per 100,000 in the high-income states against 75.8 in the low, the latter only 92 per cent of the former, By 1957 mortality in the two groups had declined to 46.3 and 61.4, respectively, but now the low-income rates exceeded the high by 33 per cent.

Mortality from motor-vehicle accidents rose in the low-income states between 1930 and 1957 but declined in the high-income states. The reversal in *direction* of the differential was similar to that for all accidents. The mortality rate in the low-income states as a proportion of that in the high increased from 75 per cent in 1930 to 141 per cent in 1957. Meanwhile, the comparable ratio in mortality from all other accidents increased from 102 to 126.

Narrowing the Health Gap

The last few decades have given us convincing proof that increased spending on health pays big dividends in reducing mortality rates and communicable diseases among the American people. Since 1930, for example, the overall U.S. death rate has declined by 37 per ecnt. In roughly the same period the per cent of each consumer dollar spent for medical care has risen sharply, by about 43 per cent.

All states, rich and poor, have shared in the general improvement. But as this bulletin points out, relatively the greatest gains in health levels have been made by the states at the bottom of the economic scale. In 1930, for example, mortality rates in the 10 states with lowest average per capita income were 13 per cent higher than those in the 10 wealthiest states. Now the gap has almost closed: Death rates in the 10 poorest states in 1957 are less than 1 per cent higher.

Concomitant with this trend, the poorer states have been catching up with the wealthy in income levels. In 1930 the per capita income for the 10 wealthiest was over three times the average for the 10 poorest; now the average of the top 10 is less than twice that of the bottom 10.

As the poorer states have improved financially, they have greatly stepped up their spending for health services and facilities. Hospital construction, for instances, has raised the level of general hospital beds closer to the nationwide average in the states where incomes are generally low. Besides supporting additional facilities and personnel, higher incomes in the poor states have undoubtedly improved educational and nutritional levels, as well as many other aspects of daily living that help lengthen the average person's life span.

Some low-income states, of course, still lag behind in the use of modern medical facilities. But the overall trend is encouraging.

—GEORGE BUGBEE, *President*
Health Information Foundation

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POSTGRADUATE SEMINAR IN ARTHRITIS AND RELATED DISEASES

JUNE 11 AND 12, 1960—DIPLOMAT HOTEL, HOLLYWOOD-BY-THE-SEA, FLORIDA

(Adjacent to Miami Beach)

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DON'T JUST COUGH, WORRY ABOUT IT

The next time you cough, don't exclaim, politely or otherwise, that, "It's nothing—just a cough." In the process, you may have triggered a hernia, caused a hemorrhage or fractured one or more ribs. Strenuous coughing can even be fatal.

Writing in the March issue of **GP** magazine, Dr. Andrew L. Banyai, a Chicago chest physician, points out that coughing "can produce many undesirable side reactions . . . " It can spread an infection within the lung or from one lung to the other, can also lead to undue fatigue, exhaustion and a poor appetite.

Dr. Banyai adds that coughing causes a sudden blood pressure increase that may, in turn, cause a headache, a hemorrhage or esophageal bleeding. In rare instances, coughing has fractured the sternum or breast-bone. When death occurs, it is usually the result of a blood pressure imbalance and insufficient blood in the coronary arteries.

Because everyone coughs occasionally, many people ignore even persistent coughs, Dr. Banyai says. Stressing that this is unwise, he adds: "Negligence and procrastination may mean progression of pulmonary tuberculosis, fungus infection, wasting diseases of the lung, spread of primary or metastatic malignant tumors, with their chronic invalidism or prospect of fatal termination."

Dr. Banyai urges his colleagues to thoroughly examine the patient who demands "cough medicine." Important factors to consider include the patient's weight and age, the character and cause of the cough and the proper therapy.

Some people, Dr. Banyai contends, suffer from "tussive insufficiency" or a lack of ability to cough satisfactorily and thus expel inflammatory products or materials from the air passages. Extreme obesity can cause tussive insufficiency and in older patients, this condition may be

caused by less resilient thoracic ligaments and lungs.

Although Dr. Banyai agrees that relief can often be obtained by breathing into a paper bag, he emphasizes that this must be done properly and adds that it can have dire results.

LSD HELPS HOPELESS MENTAL PATIENTS

LSD-25, a drug capable of bringing back childhood memories with the sharpness of a 3-D movie, is helping fight mental illness in persons formerly considered hopeless, two phychiatrists said recently.

Drs. Arthur L. Chandler and Mortimer A. Hartman of the Psychiatric Institute of Beverly Hills, Calif., reported on the use of the drug (Lysergic Acid Diethylamide) in 110 patients in the March Archives of General Psychiatry, published by the American Medical Association.

"With LSD as an aid, it has been possible to 'reach' and work with patients who are otherwise unresponsive to psychotherapy," they said.

. . . there were a number of cases in which previous therapy, sometimes with several different therapists, had produced little or no improvement but in which introduction of LSD-25 effected a real break-through, followed by continued therapeutic improvement.

"In the study are several patients who had had as much as six years of previous analytic therapy, with small benefit, and who, after 20 to 40 LSD sessions, either were discharged as markedly improved or appeared to be well on their way to the resolution of their basic problems."

They also said "because initial therapeutic gains can occur in a dramatic manner and, after a shorter period than is the case with psychotherapy in general, some patients have sought treatment and benefited who would never have accepted the long-term schedule required in psychoanalytic or most other forms of psychotherapy."

The 110 patients studied included psychoneurotics and those with personality disorders, trait disturbances, and other problems, such as addiction to alcohol and/or narcotics. There were 62 men and 48 women ranging in age from 15 to 62.

A total of 88 showed improvement ranging from "slight" to "outstanding" after an average of six sessions with LSD. The group that showed the most progress were the manic-depressives, those who are alternately highly elated and deeply depressed.

"An encouraging result is the promising progress of those with addictions. Most of these patients were alcoholic problems, but seven of these also had a recent history of drug addiction. The fact that this group did as well as it did suggests the possibility that LSD-25 may be a valuable therapeutic aid in work with this most difficult group."

Drs. Chandler and Hartman said the drug produces visual illusions, but these could not be properly defined as hallucinations.

"The most obvious difference between imagery and fantasy which occurs with LSD-25 and hallucination is the factor of insight," they said. "Under LSD-25 the patients know that they are merely experiencing a 'waking dream' or remembering some experience from the past. They do not believe that it is actually happening."

The psychiatrists also described how the drug unlocks memories stored in the unconscious.

"It is very common for early childhood memories that have been repressed or forgotten to emerge, usually with great clarity of recall," they said.

"Scenes may be pictured with great vividness of color and other detail, and the patient feels himself to be back in the situation and experiences the affects in all the original intensity. Some patients describe it by saying that it is as though a 3-D film tape were being run off. . . .

"Several patients have checked with parents concerning incidents or certain details, such as household furnishings, with striking confirmation, especially when it is considered that some of the memories dated back as early as the first year of life."

The drug's ability to bring back early memories in nearly all patients proved in some to be of "tremendous therapeutic benefit," they concluded.

ULTRAVIOLET RADIATION CUTS OPERATING ROOM INFECTIONS

Ultraviolet radiation was recommended recently as an effective means of preventing infection from antibiotic-resistant bacteria in operating rooms.

A method that has kept operating room infections to a bare minimum at Duke Hospital in Durham, N. C., was described by Dr. Deryl Hart in the March 5 Journal of the American Medical Association.

"It has always been our opinion that keeping pathogenic bacteria out of a clean wound is preferable to trying to control their growth or to kill them after they enter. . . . ," Dr. Hart wrote.

"With the present widespread distribution of antibiotic-resistant staphylococci, prevention of such contamination is now all the more important."

"No area of the body is inaccessible today to the trained surgeon," according to an accompanying Journal editorial. "However, with these larger, more traumatizing, and longer procedures, 'unexplained infections' have become progressively more common and more critical."

Ultraviolet radiation, which kills bacteria in the air, has been in use at Duke Hospital for more than 20 years in as many as 15 operating rooms.

Dr. Hart said the results obtained "have been nothing short of miraculous.

"In the Duke hospital so-called unexplained infections in clean operative wounds not only have been explained but have been eliminated, to a great extent, by a variety of measures aimed at limiting the contamination of the air with pathogenic bacteria, and by the use of ultraviolet radiation to kill the remaining bacteria that inevitably get into the air and, by sedimentation, onto exposed surfaces.

"We consider the air route of spread to be the greatest factor . . . and therefore to be responsible for most of the so-called unexplained infections in clean operative wounds today."

Dr. Hart said destroying bacteria floating in the air obviously offers protection regardless of the source of the bacteria, i.e., whether it originates in the respiratory tract of operating room personnel, contamination of the room, clothing or blankets, or air from other parts of the hospital.

It was found that air contamination rose rapidly in a bacteria-free operating room when it was occupied. Studies showed that staphylococci were the main contaminants and were directly related to the number of persons in the room, how long they remained, and the time of the year, the worst season being winter.

Dr. Hart said it also was found that the average mask, even when two are worn, is inadequate to control air contamination, and sterilization of the air within the air ducts does not reduce the bacteria content of the air to a safe level.

Protection from the ultraviolet rays can be afforded patient and personnel without any inconvenience, he pointed out.

The eyes of the personnel are guarded from direct radiation by an eye shade and from reflected radiation by glasses. The eyes of the patient are closed. For frequent and long periods of exposure, he said, the skin is covered or shaded.

On the basis of Duke Hospital's long experience, Dr. Hart recommended that "ultraviolet radiation be used continuously as an addition to aseptic operating room technique."

A.M.A. EMBARKS ON MAJOR STUDY OF MEDICAL CARE COSTS

A "Commission on the Cost of Medical Care," to delve into every phase of medicine where cost or spending is involved, was announced by the American Medical Association recently. An initial grant of $100,000 was appropriated to launch the study.

"This study-project is being undertaken," said Dr. Louis M. Orr, Orlando, Fla., president of the A.M.A., "because the American public is spending increasing amounts of money for all types of medical care. These expenditures involve the peoples' lives, health, and pocketbooks. We would like to find where economies may be achieved in the best interests of the patient. The commission will analyze the cost picture from every angle and try to come up with some sound advice and suggestions."

The commission, whose members will be announced shortly, will serve as a "little Hoover Commission" to study all medical care costs, including doctors' fees, hospital charges, nursing cost, drug expenditures, and health insurance premiums.

CLINICAL CONFERENCE SCHEDULED

A Clinical Conference on Cancer of the Female Genital System will be held at The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas, October 21 and 22, 1960.

Treatment procedures for patients with carcinoma of the cervix, endometrium, and ovary will be discussed in lectures and panel discussions. The experience and policies of treatment at The University of Texas M. D. Anderson Hospital will be reviewed.

Dr. Hans Kottmeier, of the Radiumhemmet in Stockholm, Sweden, will be the guest speaker at the Conference. The program is under the direction of Felix N. Rutledge, Section of Gynecology, Department of Surgery, M. D. Anderson Hospital and Tumor Institute.

AMERICAN COLLEGE OF SURGEONS RECEIVES GRANT

A grant of $146,275 by The John A. Hartford Foundation, Inc., of New York, to the American College of Surgeons to inaugurate a program for improving the medical management of the surgical and injured patient was announced recently by Mr. Ralph W. Burger, president of the Foundation and Dr. I. S. Ravdin, chairman of the Board of Regents of the College.

"This grant will permit the College to enlarge its long-established activities in the field of trauma, both at the national and local levels," stated Dr. Ravdin.

The American College of Surgeons is unique in that it has had a functioning Committee on Trauma since 1922, and currently has a National Committee on Trauma and 241 state and local trauma committees located throughout the United States and Canada. With this grant, according to Dr. Ravdin, these committees and cooperating organizations will be able to work more effectively in a concentrated effort to determine patterns of care of the injured patient, and to

inaugurate improvements in this care.

The new program will permit immediate establishment of pilot projects in selected cities, employment of a field staff to provide personal guidance—both to the public and to the profession—throughout America, and initiation of an evaluation program, all with the primary goal of improving care of the surgical and injured patients. It is expected that the College's current efforts in this field will also be implemented by the grant, particularly in the following problem-area programs: effective safe transportation of the injured, first aid and self-aid, organization and staffing of the several elements of hospitals involved in the emergency medical care of the injured, demands caused by disasters and education of the medical profession in the management of trauma at the undergraduate and graduate levels.

CERTAIN DRUGS CAN CAUSE GOUT

Certain drugs for treating hypertension should not be given patients susceptible to gout, a heart researcher has warned.

"For the present, it appears propitious to avoid the use of chlorothiazide and other benzothiadiazine compounds in patients with a history of gout and to suspect the possibility of gout in patients treated with these drugs who complain of aching and painful joints," Dr. Leon J. Warshaw, of the Cardiovascular Research Unit, Beth Israel Hospital, New York, said:

Writing in the Feb. 20 Journal of the American Medical Association, Dr. Warshaw said hyperuricemia, an excess of uric acid in the blood and a characteristic of gout, "is a relatively frequent concomitant of chlorothiazide administration. . . .

"Although the mechanism by which chlorothiazide produces hyperuricemia, and the relationship between this hyperuricemia and the clinical manifestations of gout, are not clearly understood, these phenomena are a drawback to the use of this drug, especially in patients with a history of gout," he said.

Dr. Warshaw said a recent report suggesting a relationship between hyperuricemia and coronary artery disease and heart attacks "makes it urgent that the true significance of the hyperuricemia be established."

Gout is a disease in which the primary symptom is a painful inflammation of the joints of the hands or feet, and especially the big toe.

NINE PHYSICIANS ENDORSE NEW RESUSCITATION TECHNIQUE

An "improved" and "simplified" method of oral resusciation was recommended by nine physicians in the Feb. 20 Journal of the American Medical Association.

Briefly, the new technique calls for the rescuer to tilt back the head of the victim as far as possible and inflate the lungs through the victim's nose or mouth.

The "head-tilt method" was studied in seven research centers in six cities in this country and abroad—Buffalo, N.Y.; New York City; Los Angeles; Copenhagen, Denmark; Karlskrona, Sweden, and Zurich, Switzerland.

"After one year of these coordinated studies in over 1,000 anesthetized human beings, results of use of the head-tilt oral method, with inflation through the victim's nose, have been uniformly satisfactory except in the group of newborn infants, which involves special problems," the article said.

The physicians suggested that the revised technique replace the old mouth-to-mouth method. The head-tilt method works better than any other field method of emergency artificial respiration and should be tried first in all cases, they said.

Nasal inflation is preferred, they said, since it prevents air from getting into the victim's stomach. It also is best suited for the victim whose jaws are too tightly clenched to be opened.

By tilting back the victim's head, his air passage are opened, they pointed out.

ORAL THERAPY REDUCES DIABETIC'S INSULIN NEEDS

Treatment of mouth diseases in diabetics has been found, in some cases, to reduce their insulin requirements.

Capt. Ralph C. Williams Jr., a physician, and Maj. Charles J. Mahan, a dentist, of the U.S. A.F. Hospital, Maxwell Air Force Base, Air University, Montgomery, Ala., reported on the effects of oral therapy in nine diabetics in the Feb. 20 Journal of the American Medical Association.

"Seven of the nine patients with diabetes and periodontal oral disease who underwent elective periodontal therapy showed significant subsequent reduction in insulin requirements," they said.

Insulin is used to control diabetes. The nine patients suffered an inflamation of the gums or the tissues surrounding a tooth, in addition to diabetes. They were treated by surgery or extraction of teeth.

"Recently we have been impressed by the striking frequency with which the relatively young diabetic patients seen in a military practice manifest extensive periodontal disease . . ," they said.

Although there are conflicting theories on what causes periodontal disease, they said it was their "impression that diabetes and chronic, destructive periodontal disease are separate entities," but added:

"Diabetes may be adversely influenced by the presence of periodontal disease, and conversely periodontal disease may be more severe in the diabetic state."

BOOK REVIEWS

A History of Ophthalmology; by George E. Arrington, Jr., M. D. New York, MD Publications, Inc., 1959. pp. 174. Price $4.00.

This monograph, the third of a planned series on the history of the various medical specialties, is a scholarly, well-written book, with a rather distinctive approach, in that the history of ophthalmology is related against the background of the history of mankind. As is pointed out in the preface by the distinguished medical historian, Félix Martí Ibáñez, Dr. Arrington, who is Associate in Ophthalmology at the Medical College of Virginia, is obviously a man who is steeped in historical values as well as in the clinical and research aspects of ophthalmology.

This book tells the story of this specialty from prehistoric times to the present electronic era. The scientific study of the eye was long delayed because of the early association of this structure with superstitions, myths, legends, and religious symbolism. The results of delay were tragic in the countries in which such conditions as ophthalmia, cataracts, and trachoma were widespread.

The earliest knowledge concerning diseases of the eye dealt, as might be expected, with those affecting the external eye. Spectacles were used as early as the thirteenth century, centuries before the physiology of vision was understood. Leonardo da Vinci, with other painters in the Middle Ages, played an important part in the elucidation of ocular anatomy. After the dissection of many cadavers, he concluded that the central organ of vision was not the lens, as had previously been thought, but the retina, though he seems to have believed that the image falls only on the head of the optic nerve. He also devised mirror-grinding instruments, which eventually led to the development of refined lens-grinding techniques.

As time passed and more and more knowledge concerning the anatomy of the eye and its functions was accumulated, the groundwork was thus laid for the technical developments of the nineteenth century, which were made possible by the discovery of anesthesia, the development of the new science of bacteriology, and the introduction of antiseptic and then aseptic surgery.

When they are brought together, as the author brings them together in a page or two of this book, the diagnostic and therapeutic developments and refinements of the present century are truly amazing. Among them are slit-lamp microscopy; slit-lamp examination of the posterior segment; gonioscopy, binocular ophthalmoscopy; stereoscopic color photography of the anterior segment and fundus; stereocampimetry; angioscotometry; eikonometry; contact and aniseikonic lenses; trifocal lenses; plastic implant lenses; reading aids for the visually handicapped; ultraviolet light; flicker fusion fields; ophthalmoscopy with monochromatic, polarized, and red free light; the eye bank; new methods of treating retinal detachment; scleral resectional keratoplasty; anesthesia for cataract surgery; techniques of akinesia; antibiotics and chemotherapy in infections; penicillin in ophthalmia neonatorum; the use of cortisone and similar agents; new methods of treating glaucoma; filtering and goniotomy surgery; X-ray and electronic localization of metallic foreign bodies; preventive measures in retrolental fibroplasia; radioactive element uptake by tumors and their plotting by Geiger counter methods. The list seems almost incredible after one has read in this book the long way ophthalmology had to come before it reached this stage.

The book has a number of useful appendices. One of them is a world list of ophthalmologic periodicals. Another is an ingenious chart relating the chronology of ophthalmology and correlating the major contributions of a number of ophthalmologists with the appropriate stage of world history; a more detailed chart would have been welcome. Still another appendix is a list of ophthalmological organizations, which is not complete; it omits the name of the New Orleans Academy of Ophthalmology, among others. The concept of all of these appendices is, however, excellent. The index is adequate.

Two sentences particularly impress one in reading this book: One is that the vast amount of technical and medical information available today concerning the anatomy of the eye, the physiology of vision, and the pathology, diagnosis, and therapy of ocular diseases makes it difficult to conceive of a time when none of this knowledge existed. The story of its gradual accumulation is well told in this history.

The second sentence which strikes one particularly is a warning for the ophthalmologist of the dangers of the contemporary trend of relying too much upon *things*, with the result that "during an *electrical* power failure, ophthalmological practice all but ceases." As history shows, and as this book emphasizes, the advances that have been made are of infinite value, but the ophthalmologist must still rely upon the clinical potentialities of the senses God gave him.

GEORGE M. HAIK, M. D.

Fads and Fallacies in the Name of Science; by Martin Gardner. New York, Dover Publications, Inc., 1957. pp. 363, Price $1.50.

Originally published under the title *In the Name of Science*, this is the most complete coverage of unorthodox medicine since the similar volume by Fishbein. Such a book serves to equalize the coverage which the media of publicity are accustomed to give to the facts of medicine.

Contained in the volume are discussions of naturopathy, iridiagnosis, zone therapy, food fads, orgone sex therapy and even the story of the Bridey Murphy episode. It is an able and well-organized presentation of topics which have been furiously argued by proponents and opponents and will serve a most useful and informative purpose at very reasonable cost.

MARY LOUISE MARSHALL

Anatomy of the Human Body; by Henry Gray, 27th Edition, 1959, Lea and Febiger Philadelphia, Pa. pp. 1458. Price $17.50.

The 27th edition of this famous text marks the centennial of its publication and continues with some modifications, the general format of its previous printings. It is composed of sections on Embryology, Topographical Anatomy, Osteology, Joints and Ligaments, Muscles and Fasciae and the various Systems; Cardiovascular, Lymphatic, Nervous, Integumentary, Digestive, Urogenital, and Endocrine. In addition to descriptions of gross structures in each section, there is a brief review of their function, developmental history, and microanatomy, together with a brief but pertinent bibliography.

The editor in his preface to this edition, notes several of the problems encountered in deciding format changes, based on suggestions and advice from various sources. Among these, are length and proportion of the various sections, inclusion of Embryology and Histology, and especially, that of treatment of the Central Nervous System. There is particular concern about attempting to make this volume serve several purposes without increasing it to impractical length. It seems that rather a middle course has been chosen, that of changing bits here and there while retaining the plan used in previous editions.

The question arises as to whether a middle course can be profitably pursued. There has been a tendency in recent years to decrease the total time devoted to Gross Anatomy. This makes impractical for medical students an encyclopedic text and demands the most astute editorial judgment on what can be eliminated. Obviously no decision on this point can please all would-be users of any volume. One approach to this problem has been that of elimination of collateral subject material within the anatomical specialties, e.g., Microanatomy, Embryology, and even Neuroanatomy. There is considerable doubt that an abstract or precis of such collateral material is adequate or even useful for associative purposes, particularly by students exposed to Gross Anatomy for the first time.

As indicated, again in the editor's preface, medical students are almost universally expected to provide themselves with textbooks for each of the anatomical specialties. It seems to this reviewer that such up-to-date, complete sources would be more useful to all students than would be an inserted paragraph incidental to another major subject. In extreme cases it might even provide for the initiate a misleading concept of brevity, simplicity, or even importance of the material so treated. That is to say, there is reasonable doubt that any such text can still be made all things to all students.

This point is particularly well illustrated with reference to the section on Central Nervous System. Here, approximately one-hundred pages are devoted to this most complex topic including its Histology. This treatment might be adequate for purposes of review or reference but is quite inadequate as primary text material and for this reason, its very presence in the volume is of controversial nature. Again, this section apparently follows the middle course between being made really adequate and actually withdrawn.

When any textbook is carried through a number of successive editions, there is often the tendency for authors or editors to insert new features or treatment in part to justify the printing of a new volume. Dr. Goss has studiously avoided this error but in isolated cases, possibly to the detriment of the work as a whole. Segmentation of the liver, for example, is mentioned with respect only to its microscopic (lobular) units; whereas various studies within the last decade tend to emphasize the importance of regional segmentation based on distribution of the duct system. A similar instance might be noted with respect to segmentation of the lung. In this case the subject is considered briefly and with a helpful illustration, but the accompanying text material could have been expanded profitably for the benefit of students not already familiar with the subject.

A minor criticism might be inserted with reference to choice of entries in the bibliography for various sections. While there seems to be an adequate number of recent entries, a number of important recent contributions have not been considered adequately. While it is true that no two people could agree on which entry should be included, it seems to this reviewer that in the subject of bibliography, this section also should be expanded to adequate reference length or eliminated completely.

RALPH N. BAILLIF.

Current Medical References: P. J. Sanazaro, M.D., Editor. Los Altos California, Lange Medical Publications, 1959, pp. 535. Price $3.50.

The medical reference situation has been thoroughly unsatisfactory since the *Quarterly Cumulative Index Medicus* lost its momentum during World War II. It is now consistently late, and the *Current List*, while useful as a port of call in an emergency, is a maddening and time-consuming production to use.

It is highly doubtful, however, that *Current Medical References* is the solution of the problem.

This small book of 535 pages, including a 31-page index, contains, according to the editor's preface, "some of the more useful and significant references to the literature of the past twenty years" in the field of clinical medicine. Most of the references seem to lie within the 1953-1958 period, but even that relatively recent span scarcely fits the definition of current.

The book is diveded into 18 sections, 11 dealing with body systems and special organs and the remainder with general topics and general and special diseases and conditions.

The policy of selecting references which offer comprehensive lists of references for other works is commendable but carried out unevenly. Some of the reviews, such as those on peripheral vascular disease, are reasonably up-to-date (1954-1959), but the review of drug eruptions is dated 1949.

There are also many curious omissions. Spurling's definitive text on the lumbar intervetebral disc is cited under disease of the intervertebral disc, but his later, equally definitive, book on the cervical disc is omitted. Periodic disease, certainly an infrequent condition, has three listings, with a total of 152 references in them. Appendicitis, which is still killing its thousands, also has three listings, with a total of only 36 references. One of the articles listed reports 1,358 cases and another 549 cases. Boyce's book on the subject is not listed, though it is based on more than 6,400 cases and has a bibliography of more than 500 references. Under aneurysms, there seem to be no references to the epoch-making work of DeBakey and his associates at Baylor University. The term fracture does not appear in the index or as a heading in the section on bones, which is chiefly devoted to diseases.

There are only eight references to cold injury, all in the periodical literature. The volume on cold injury in the history of the U.S. Army Medical Department in World War II is not listed, though it has been acclaimed as the most comprehensive book ever written on the subject. Similarly, the volume in this series (*Neurosurgery, Volume I*) which relates the very extensive wartime experience with head trauma is not listed, nor is this experience covered in the references listed from the periodical literature. Finally, all the references under the heading of shock run from 1952 to 1958 and thus do not include the important wartime clarification of this condition. *General Surgery Volume II* in the series just mentioned, which covers the modern concepts and management of this potentailly lethal state, is not listed.

In short, what the publisher says in his foreword about the necessity for compromise in this book is apparent in every page. The basis of the selection of these references is necessarily biased by the, presumably, varied interest, knowledge, and personal preferences of the 140 observers who made up the lists. A book which takes all clinical medical literature, even of the last 20 years, for its province is defeated by its very concept.

In his foreword, the publisher remarks that the book is intended only as a starting point for the investigation of the subjects included. Since the searcher for information must necessarily go to the library to get the listed references, he had probably best stick to the old-fashioned habit of digging out his own information. On the other hand, while the listings in this book are neither comprehensive nor truly current, they represent a remarkably good try. As Dr. Samuel Johnson said to his Boswell, "Sir, a woman's preaching is like a dog's walking on his hinder legs. It is not well done; but you are surprised to find it done at all."

On a casual survey, the typographical errors, in spite of the publisher's advance apology for them, do not seem to be numerous.

ELIZABETH M. MCFERTRIDGE, M. A.

A Cook Book for Diabetics; by Deaconess Maude Behrman, American Diabetes Association, 1959, pp. 172. Price $1.00.

Used in conjunction with the American Diabetic Association's *Meal Planning with Exchange Diets*, or used separately as a caloric guide for diabetic meal planning, *A Cook Book for Diabetics* provides a facile as well as palatable way to vary the diabetic's diet. Recipes and techniques of food preparation allow the diabetic to combine numerous foods and yet come out with a caloric as well as exchange list answer. Deaconess Maude Behrman has literally prepared a menu from soup to nuts with excursions off the beaten path for Passover and Lent, all in all, a real help to the diabetic.

TED BLOCH, M. D.

PUBLICATIONS RECEIVED

Appleton-Century-Crofts, Inc., N. Y.: First Aid: Diagnosis and Management, by Warren H. Cole, M. D., and Charles B. Puestow, M. D., with 16 Contributing Authors (5th Edit.); Medical Care of the Adolescent, by J. Roswell Gallagher, M. D.

Doubleday & Co., Inc., Garden City, N. Y.: Women and Fatigue, A Woman Doctor's Answer, by Dr. Marion Hilliard.

The C. V. Mosby Co., St. Louis: Communicable and Infectious Diseases, by Franklin H. Top, M. D. (4th Edit.).

W. B. Saunders Co., Phila.: Clinical Management of Behavior Disorders in Children, by Harry Bakwin, M.D., and Ruth Morris Bakwin, M. D. (2nd Edit.); A Manual of Tropical Medicine, by George W. Hunter, III, Ph.D., Col. U.S.A., (Ret.), William W. Frye, M. D., and J. Clyde Swartzwelder, Ph.D. (3rd edit.).

Vantage Press, Inc., N. Y.: I Prescribe Laughter, by Thomas Richard Rees, M. D.

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1. Innerfield, I.: Clinical report cited with permission
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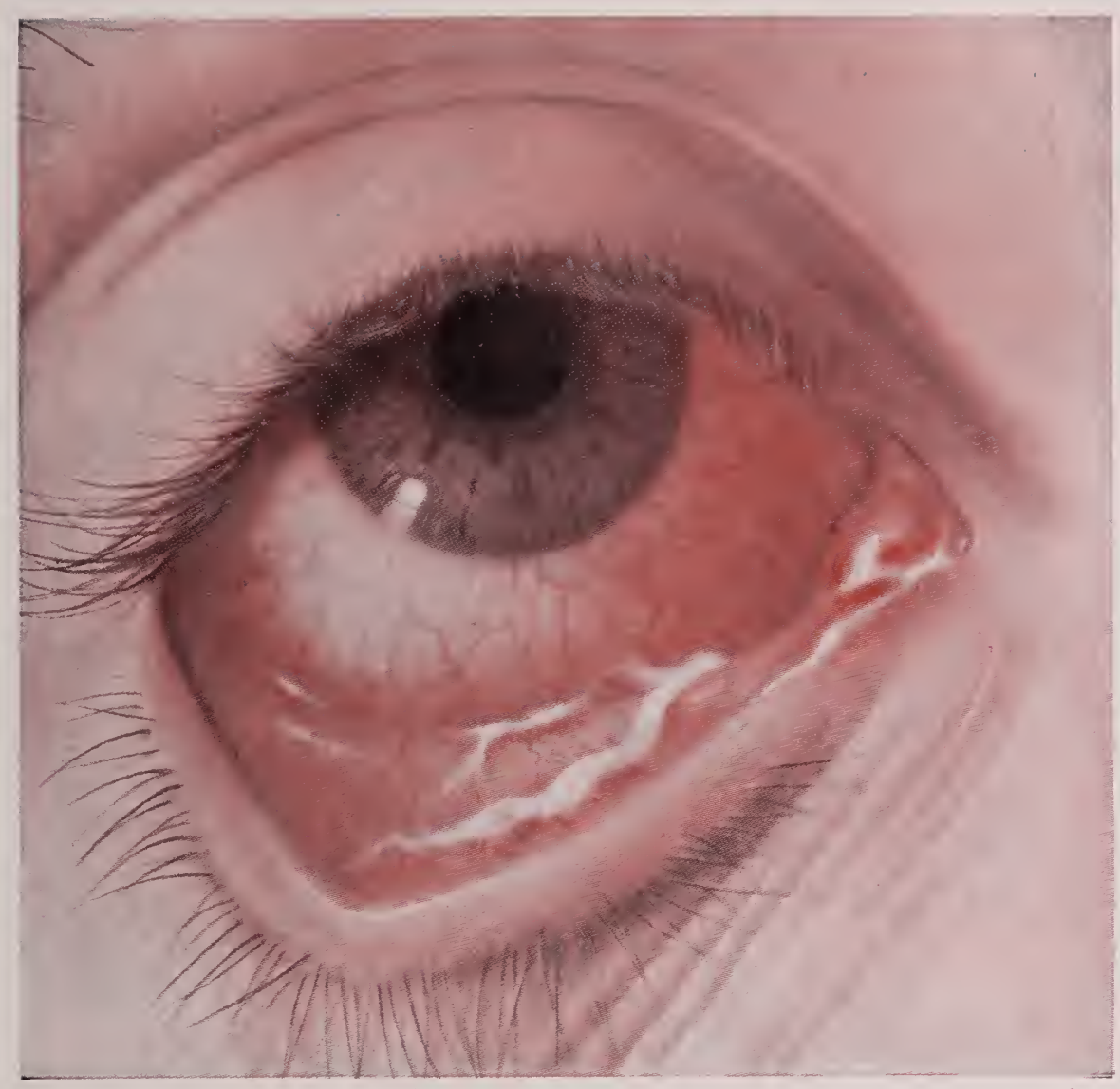


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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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Source: Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.: Diabetes *8*:289, 1959.

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Weight loss	47	42.7
Polyphagia	28	25.4
Anorexia	16	14.5
Lethargy	14	12.7
Enuresis	7	6.4
Vomiting	5	4.5
Irritability	3	2.7
"Craving for sweets"	3	2.7
"Sticky diaper"	3	2.7
"Strong odor to urine"	2	1.8
Glycosuria	2	1.8
Hypoglycemia	2	1.8
Personality change	1	0.9
Boils	1	0.9
Headache	1	0.9
Abdominal cramps	1	0.9

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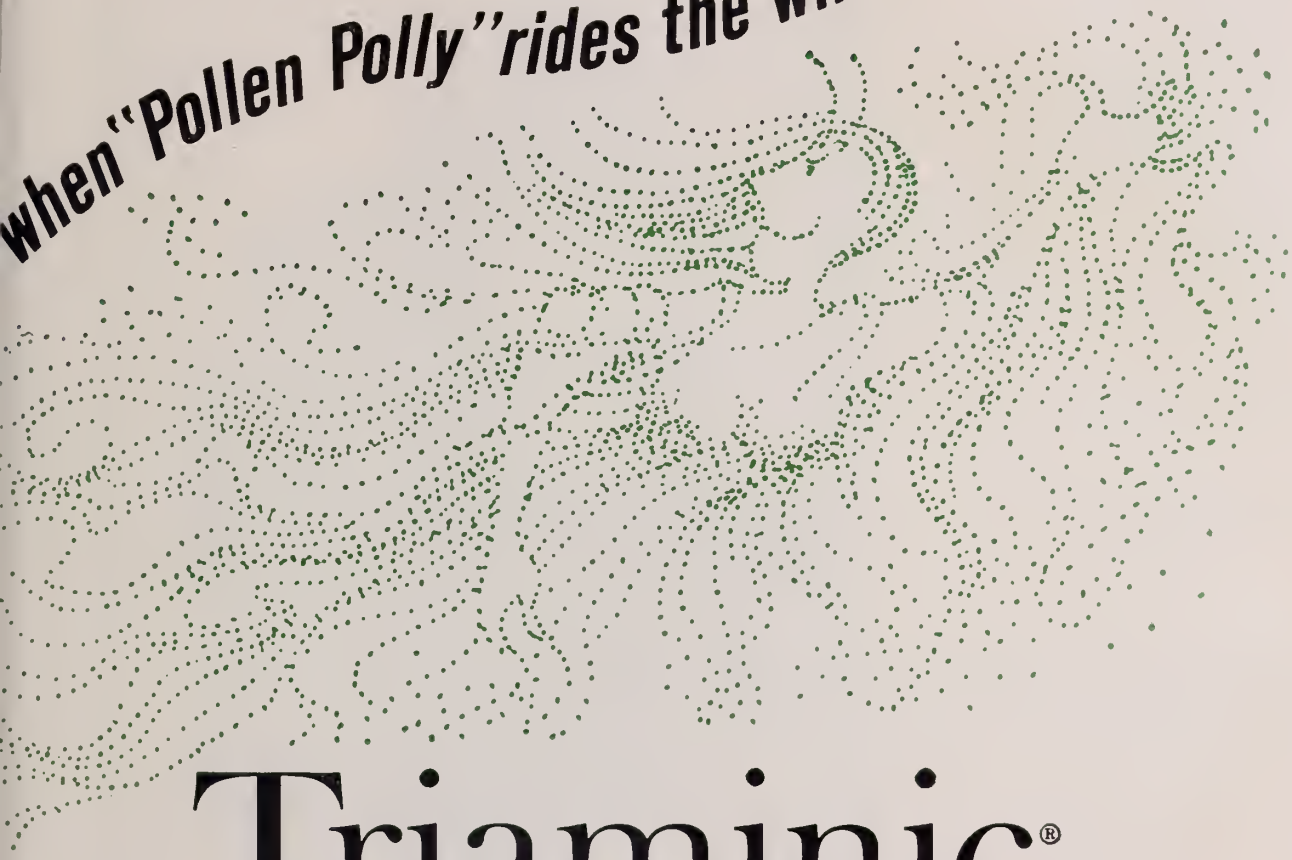
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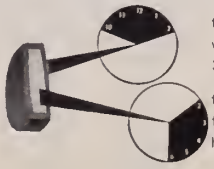
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References: 1. Fabricant, N. D.: E. E. N. T. Monthly **37**:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Fuchs, M.; Bodi, T.; Mallen, S. R.; Hernando, L., and Moyer, J. H.: Antibiotic Med. & Clin. Ther. **7**:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy **18**:36 (Jan.) 1960.

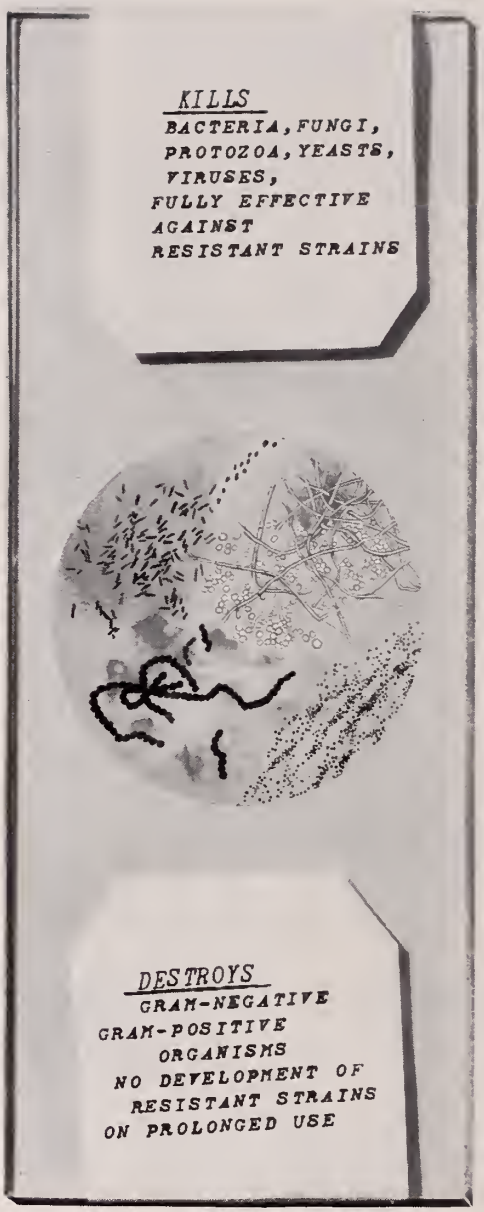
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IN TOPICAL INFECTIONS, regardless of etiology, BETADINE OINTMENT destroys all pathogens present. BETADINE OINTMENT provides a protective barrier against invading pathogens, relieves pain, applies easily, and may be bandaged. Its characteristic color indicates continuing germicidal protection. **Yet, BETADINE OINTMENT is nonsensitizing, nonirritating, and nontoxic to skin tissue.**

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ADMINISTRATION: apply liberally over affected area as often as needed, bandage if desired.

SUPPLIED: one ounce tube.

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in infectious disease[17,22,30,36]
in arthritis[16,19,20,29]
in hepatic disease[2,3,4,5,38]
in malabsorption syndrome[1,2,6,27]
in degenerative disease[6,7,19,20,40]
in cardiac disease[23,28,29,38,41]
in dermatitis[24,39]
in peptic ulcer[8,21,38]
in neuroses & psychiatric disorders[25,26]
in diabetes mellitus[31,32,33,38]
in alcoholism[9,11,35,37,38]
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11 vitamins, 8 minerals clinically-formulated and potency protected to provide

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Protein, 0.8 grm.; calories, 104/8 oz. glass (Average of American Beers)

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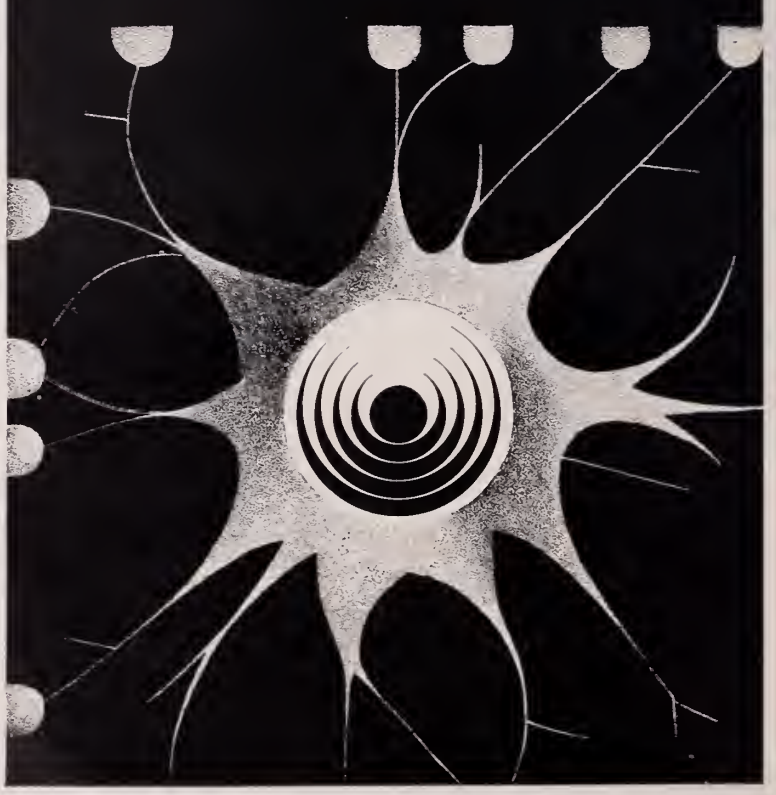

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References: 1. Ayd, F. J., Jr.: Bull. School Med., Univ. Maryland *44*:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. *81*:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. *3*:155, 1958. 4. Mann, A. M. and MacPherson, A. S.: Canad. Psychiat. A. J. *4*:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M.A.J. *80*:540, 1959. 6. Straker, M.: Canad. M.A.J. *80*:546, 1959. 7. Strauss, H.: New York J. Med. *59*:2906, 1959.

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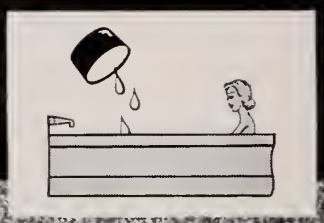
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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

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specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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ALPEN gives much higher antibiotic levels within the first hour of ingestion by the well-tolerated oral route.

WHEN TO USE ALPEN Recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci.

HOW TO USE ALPEN Depending on the severity of the infection, 125 mg. (200,000 units) or 250 mg. (400,000 units) three times daily may be used. In more severe or stubborn infections, a dosage of 500 mg. (800,000 units) t.i.d. may be employed. In beta hemolytic streptococcal infections, treatment should be continued for at least ten days.

PRECAUTIONS The usual precautions in the administration of oral penicillin should be observed. For further details see package literature.

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this is the tablet that gives higher peak antibiotic blood levels

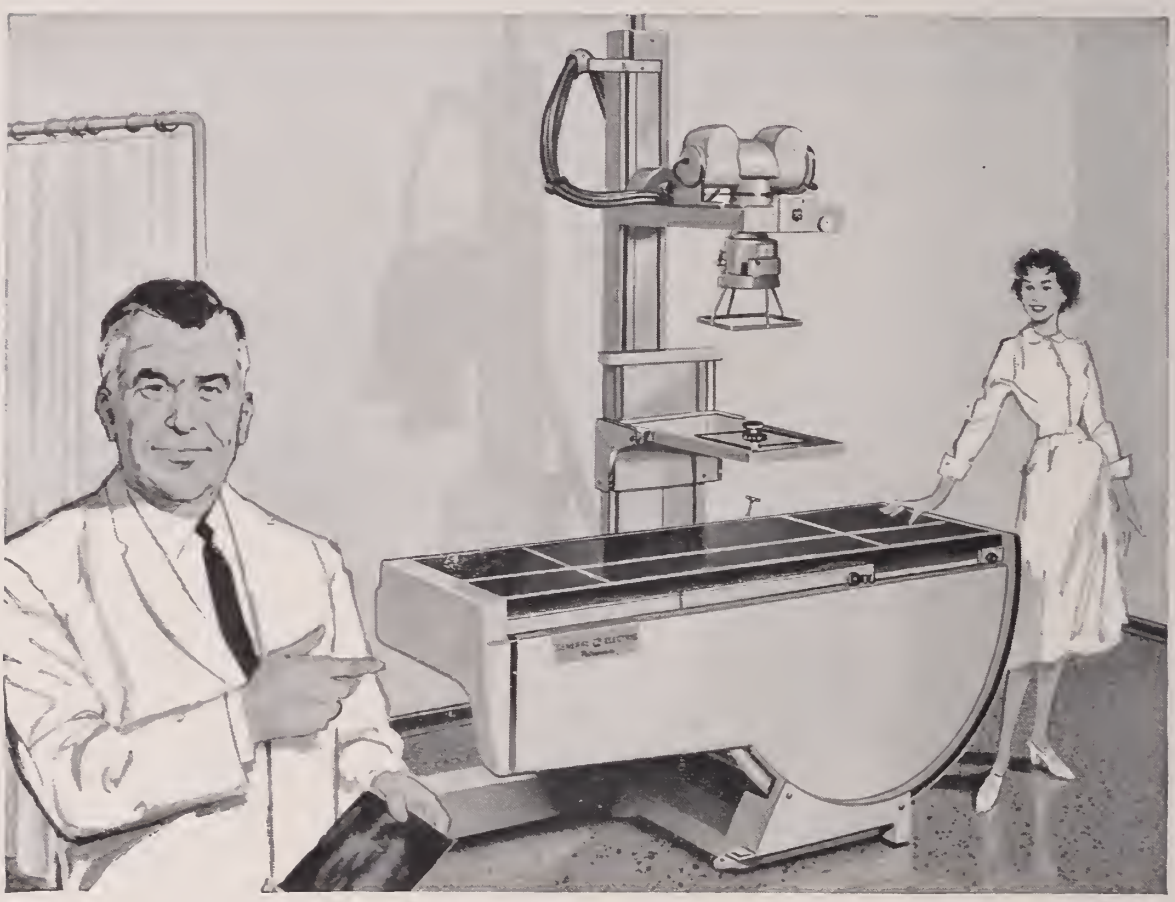
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1. Projection from Vital Statistics, U.S. Government Dept. HEW, Vol. 48, No. 14, 1958, p. 398.
2. Modell, W.: Drugs of Choice 1958-1959, St. Louis, C. V. Mosby Company, 1958, p. 347.

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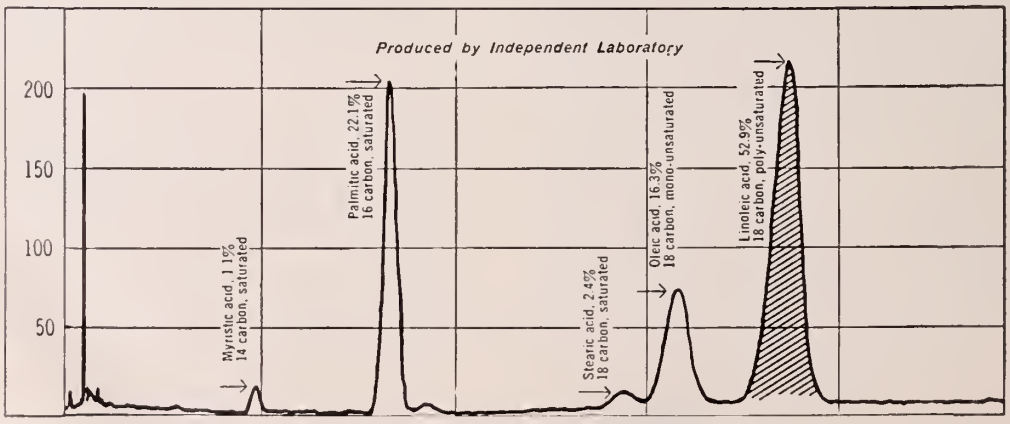
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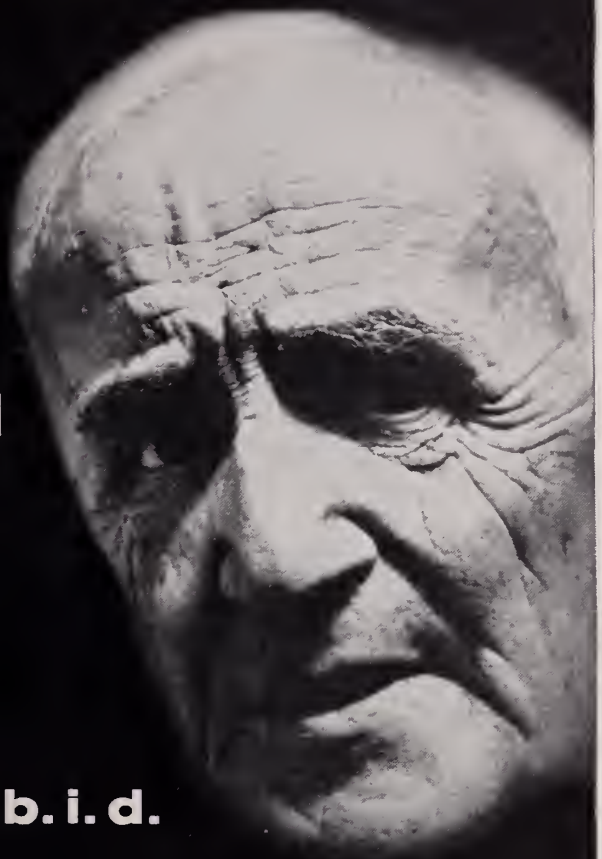
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1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: Antibiotic Med. & Clin. Ther. 3:378 (Nov.) 1956. 2. Boger, W. P.: In: Antibiotic Annual 1958-1959, Medical Encyclopedia, Inc., New York. 1959, p. 48. 3. Sheth, U. K.; Kulkarni, S. S., and Kamath, P. G.: Antibiotic Med. & Clin. Ther. 5:604 (Oct.) 1958. 4. Anderson, P. C., and Wissinger, H. A.: U. S. Armed Forces M. J. 10:1051 (Sept.) 1959.

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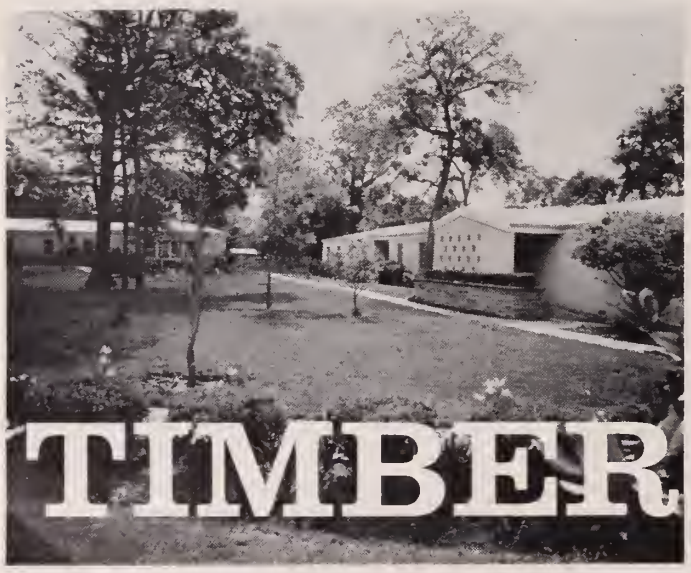
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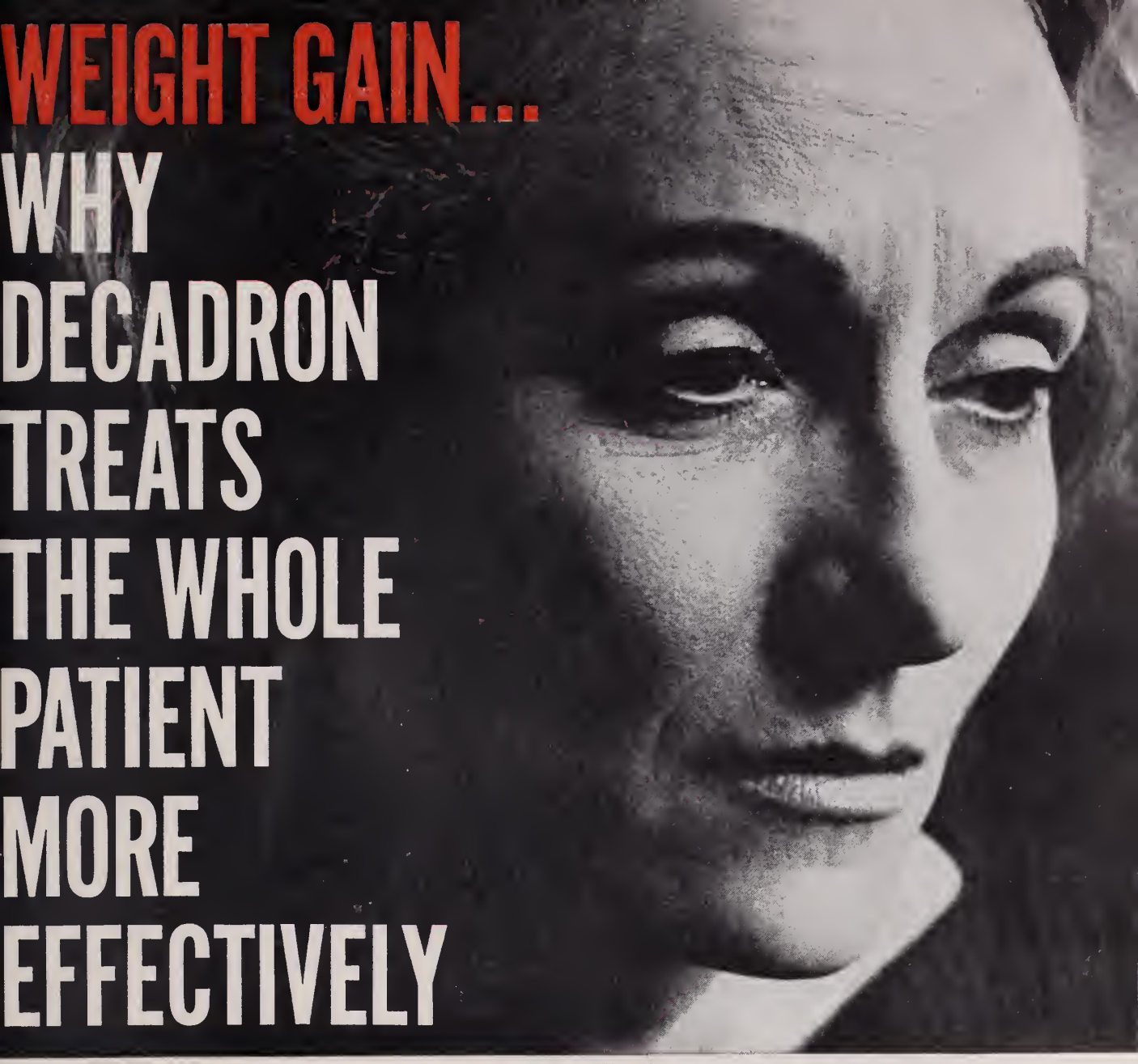
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References: 1. Bunim, J. J., et al.: Arthritis & Rheumatism *1*:313, 1958. 2. Silverman, H. I., and Urdang, A.: Am. Prof. Pharm. *25*:531, 1959. 3. Rudolph, J. A., and Rudolph, B. M.: Ann. Allergy *17*:710, 1959. 4. Spies, T. D., et al.: South. M. J. *51*:1066, 1958. 5. Galli, T., and Mannetti, C.: Minerva med. *50*:949, 1959. 6. Segal, M. S., et al.: Ann. Allergy *17*:413, 1959. 7. Duvenci, J., et al.: Ann. Allergy *17*:695, 1959.

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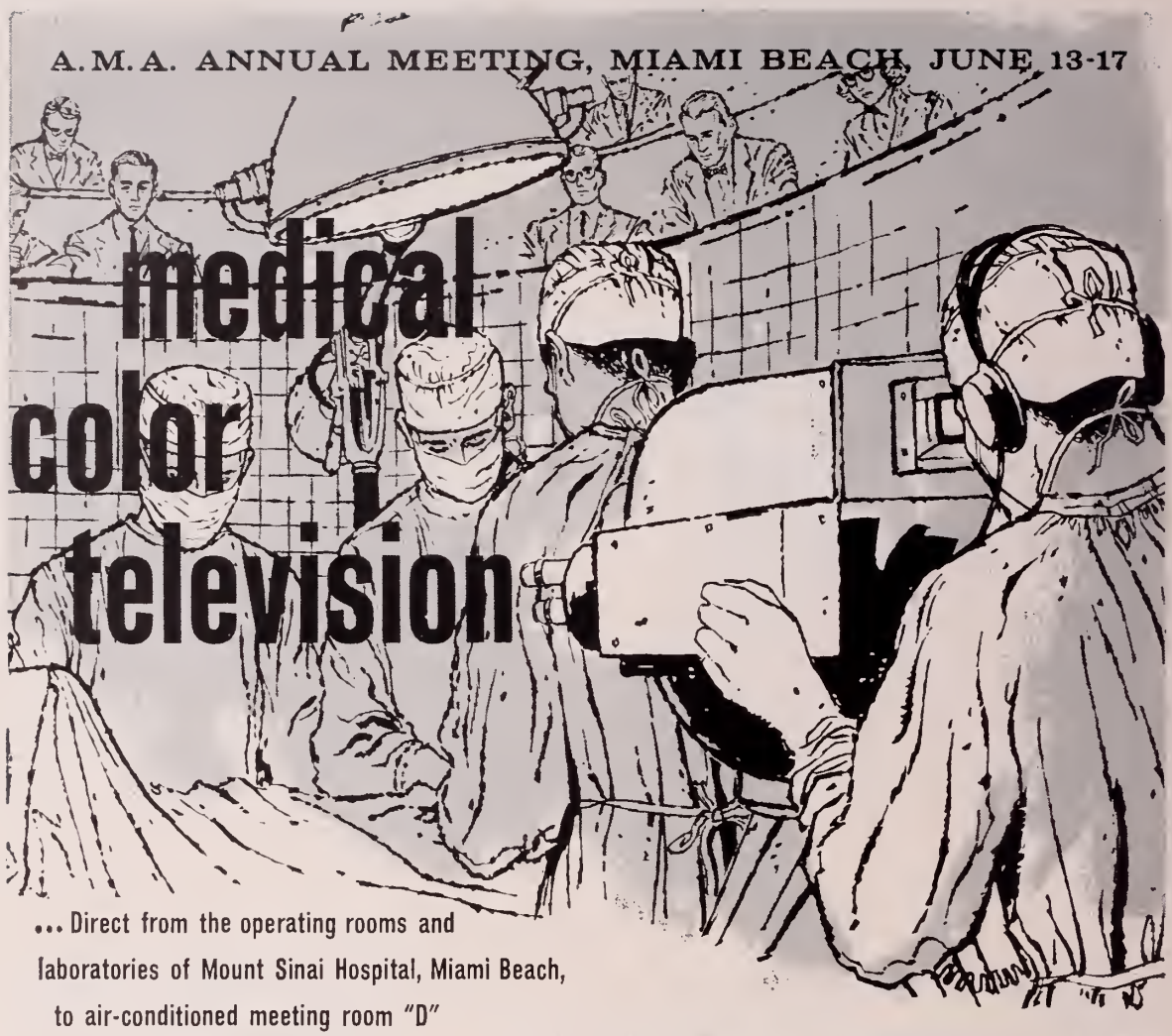
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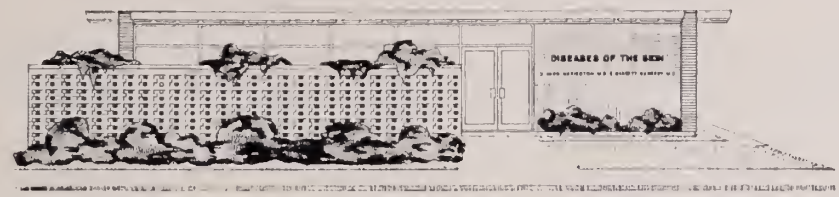
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1. Goddard, E.S.: in *Trifluoperazine, Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959.

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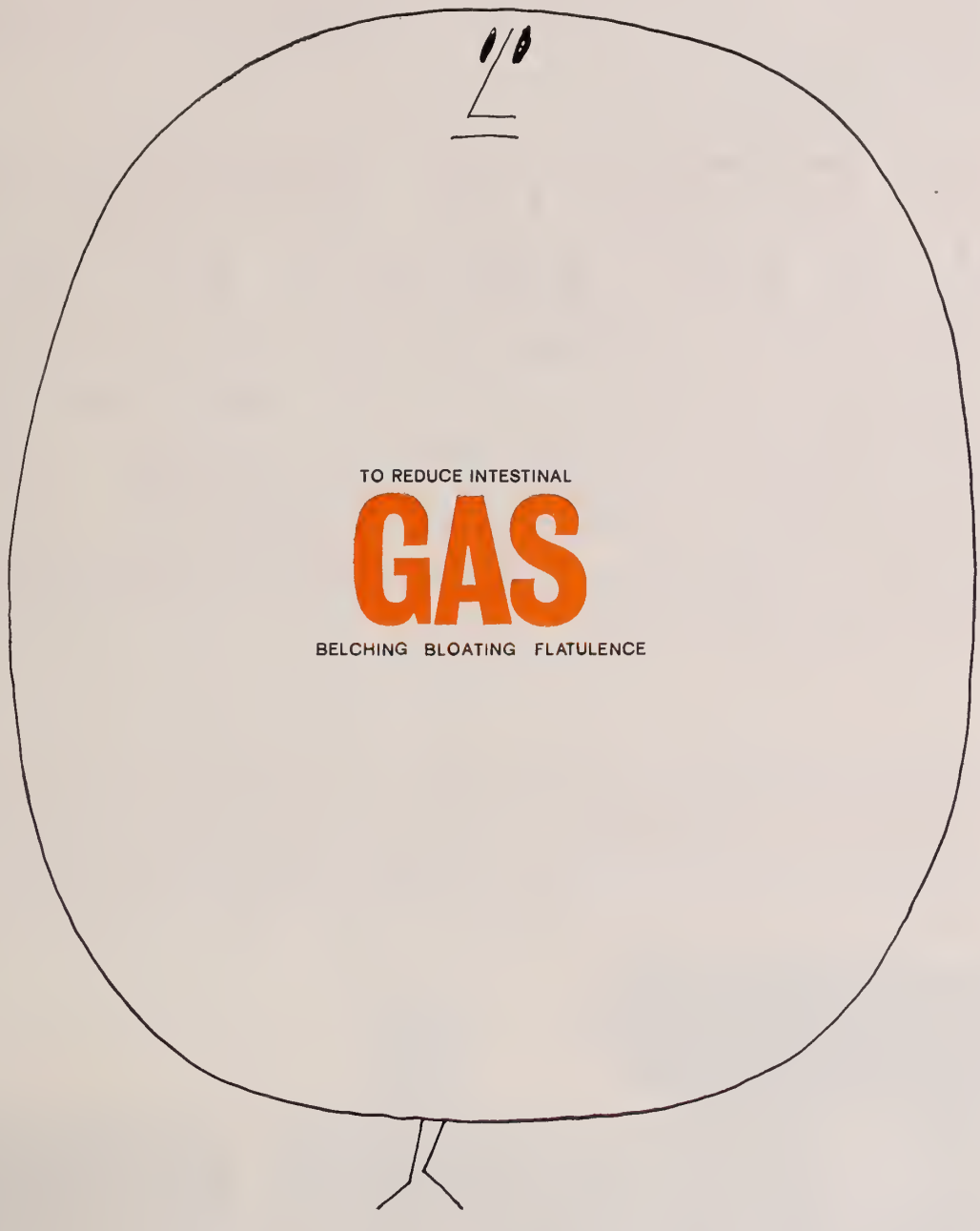
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References: 1. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958 • 2. Lichtman, A. L.: Scientific Exhibit, Internat. Coll. Surgeons, Jan. 4-7, 1959, Miami Beach, Fla. • 3. Gruenberg, F.: *Current Therap. Res.* 2:1, Jan., 1960 • 4. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960 • 5. Collective Study, Department of Medical Research, Winthrop Laboratories.



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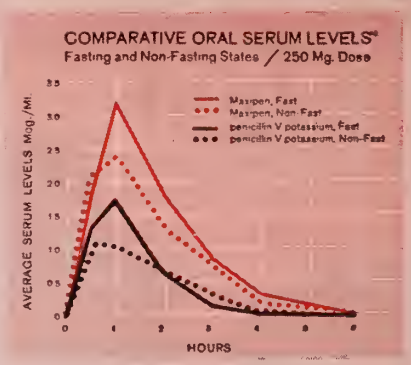
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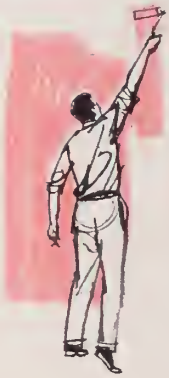
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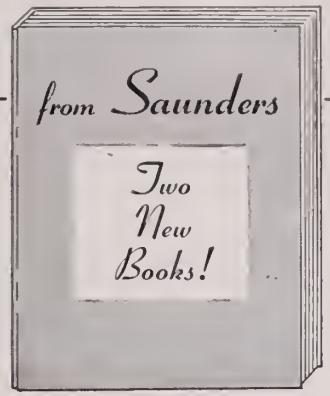
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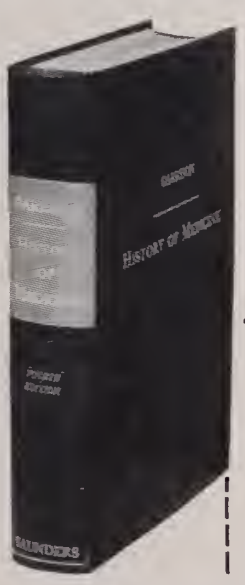
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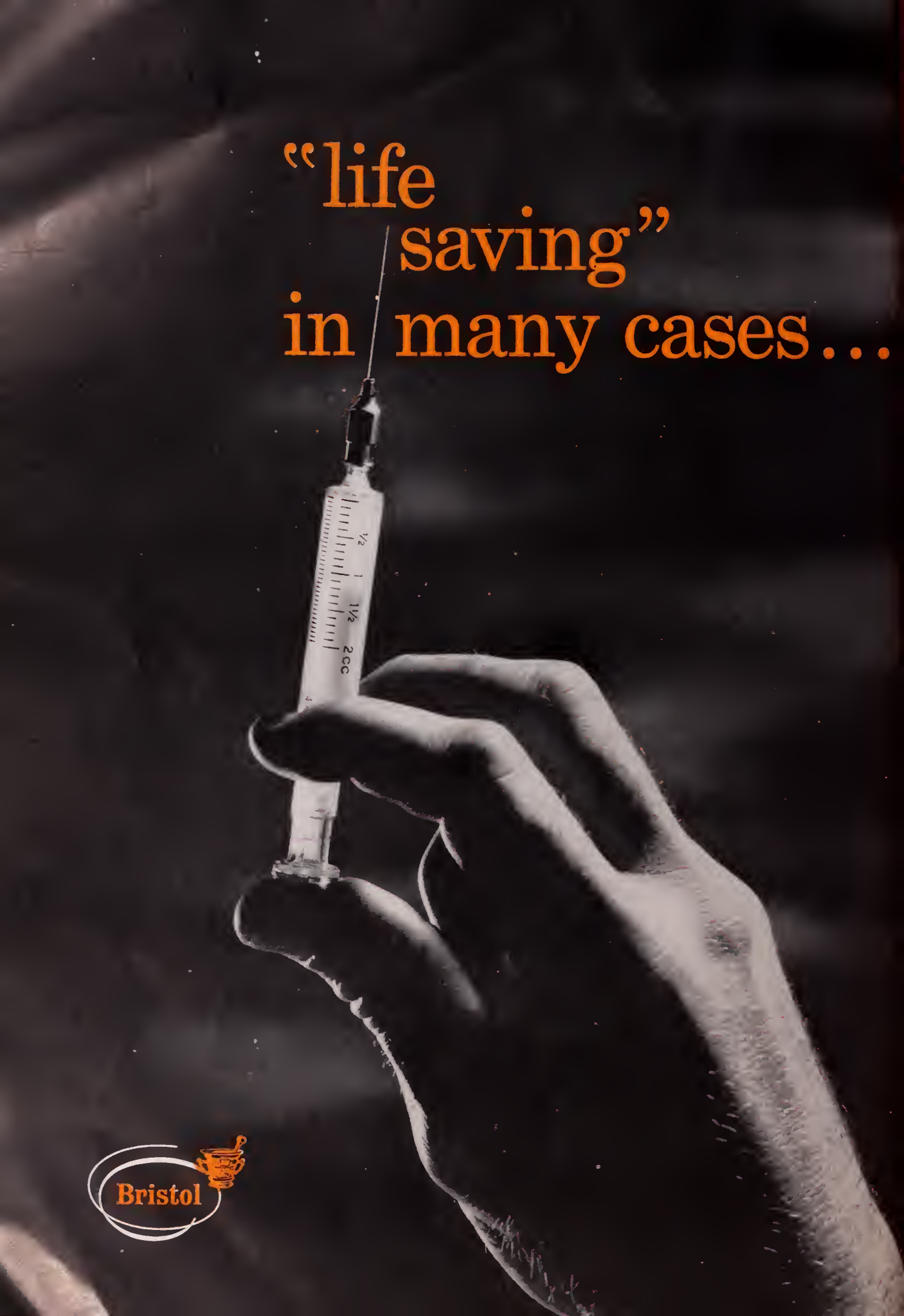
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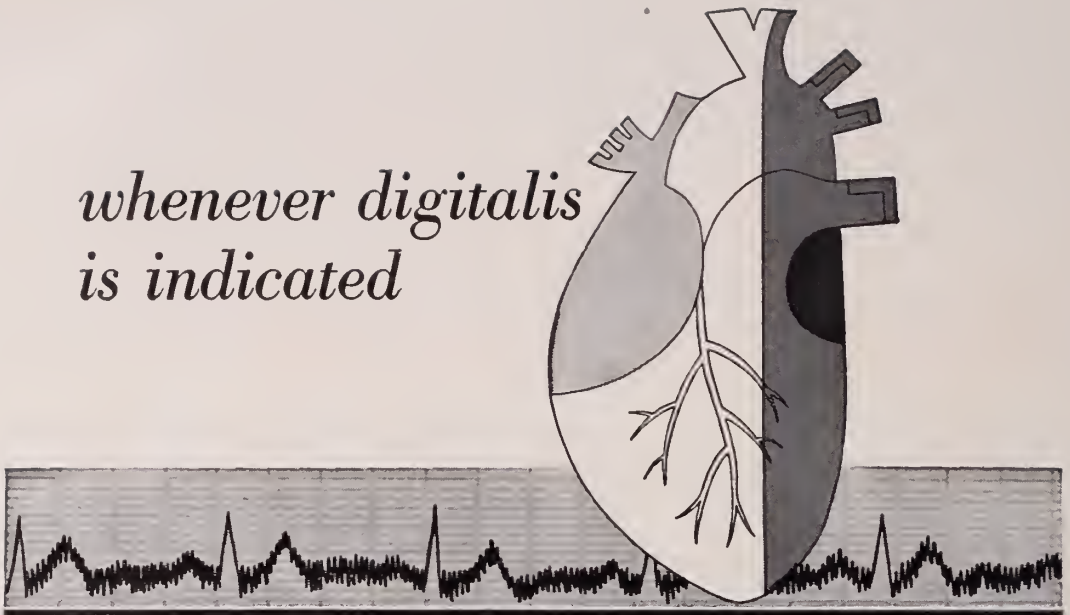
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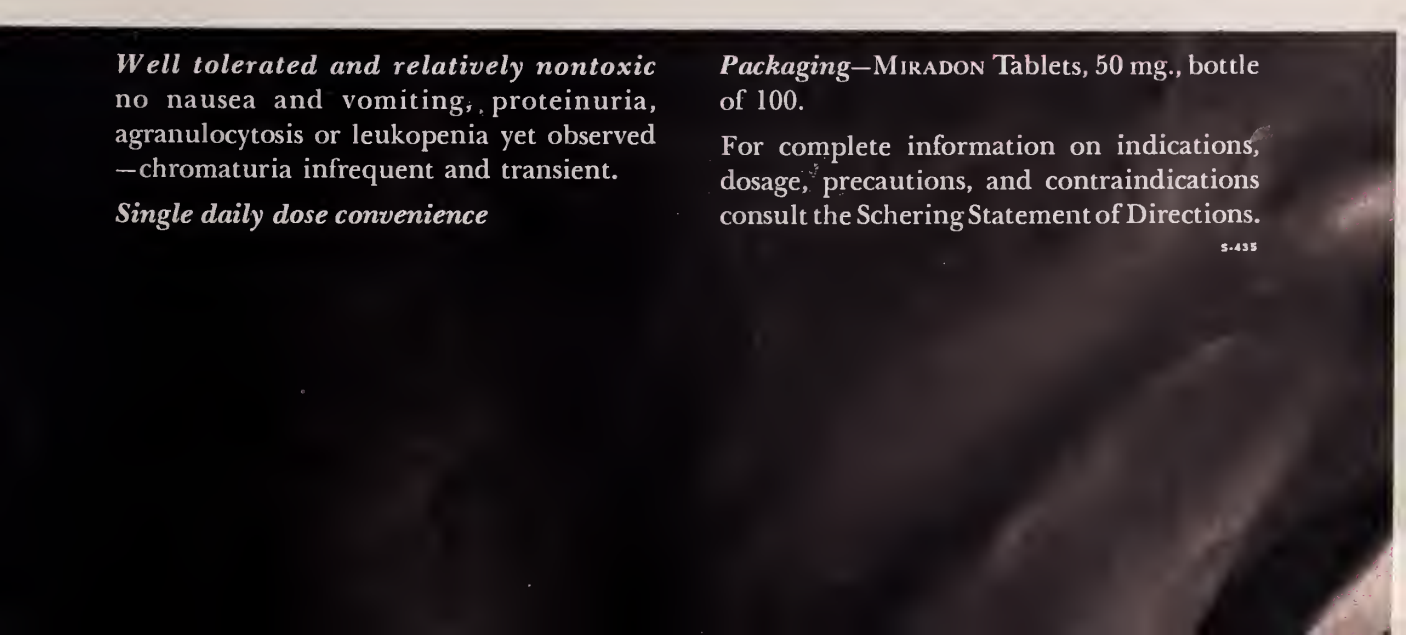
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JUNE, 1960

Published Monthly
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Diverticulitis: Indications For Surgery*

• The morbidity of the surgical treatment of diverticulitis remains high. It can be reduced, first, by avoiding those operative procedures that have proved unsatisfactory for the surgical treatment of this disease, and second, by advising patients with persistent or recurrent diverticulitis to be operated on before perforation, a fistula or complete obstruction develops. This can be done while still maintaining the present low case fatality rate associated with the surgical treatment of this disease.

BENTLEY P. COLCOCK, M. D. †
Boston, Mass.

DIVERTICULITIS is a fascinating disease because it manifests itself in so many different ways. A patient with diverticulitis may have only an occasional episode of mild abdominal distress, or he may have all the signs and symptoms of a carcinoma of the colon. He may complain of a persistent soreness in the lower part of the abdomen or he may present the picture of acute appendicitis. He may have no gastrointestinal symptoms and complain only of dysuria and pain in his bladder.

Diverticulitis is also a treacherous disease. A moderate degree of abdominal pain and distention may suddenly develop into acute large bowel obstruction. If one of the inflamed diverticula perforates, peritonitis results. This immediately produces a very dangerous situation in an obese, elderly patient. Even the patient whose only symptom is the passage of gas from the urethra has a serious complication of diverticulitis. It will be many weeks or months before any one of these patients is well again.

The mortality rate for the surgical treatment of diverticulitis just twenty-five years ago was as high as 50 per cent. Today it is less than 5 per cent and the mortality rate at this clinic for the last ten years was 1.5 per cent. We have had no deaths following surgery for diverticulitis during the last seven years. The greatest single factor responsible for this remarkable reduction in mortality rate has been the routine use of a staged operative attack for patients with the complications of this disease.

Surgical Treatment

Operation is required when the colon becomes obstructed, perforates or forms a fistula into the bladder or vagina. If

* Presented at the Twenty-third Annual Meeting of the New Orleans Graduate Medical Assembly, March 7-9, 1960.

† Department of Surgery, The Lahey Clinic, Boston, Massachusetts.

complete obstruction or a perforation is present, the need for surgery is urgent. Apart from drainage of a large abscess, the only operative procedure that should be done is a proximal colostomy. Later, the patient will need a resection of the diseased colon and closure of his colostomy. The colostomy is made in the proximal part of the transverse colon (Fig. 1) so as to permit mobilization of the splenic flexure at the time of the subsequent resection. If the inflammatory reaction surrounding the perforation or the fistula is extensive, it will take from four to six months to subside. The sigmoid can be resected more easily and the risk of further complications reduced if the patient is advised to wait this length of time. If the inflammatory reaction has completely subsided, the colostomy may be closed at the time of the resection. This should only be done, however, when the surgeon is entirely satisfied with the integrity of his anastomosis. If a defect is present and leakage occurs, the anastomosis will heal without incident if a proximal colostomy is present; without the colostomy, it may lead to an abscess and a fistula.

Differentiation of Diverticulitis and Carcinoma

It is quite typical of diverticulitis that even the treatment of choice cannot be applied routinely. Carcinoma of the sigmoid must be ruled out in each of these patients. In practically all patients with diverticulitis the segment of colon involved is the sigmoid. The sigmoid is also the commonest site for carcinoma of the colon. Both conditions occur in the same age group and the symptoms of each may be identical. If carcinoma cannot be excluded, the lesion must be resected in two to three weeks following the colostomy, rather than after four to six months. Even when conditions permit a primary resection of the sigmoid, the operative procedures for these two lesions differ considerably. To subject a patient with diverticulitis to an extensive cancer operation is unnecessary, and is associated with an increased morbidity and mortality rate because of the inflammatory reaction present. On the other hand, if carcinoma is present, a conservative resection may forfeit the patient's only chance for cure.

Proctoscopic examination rarely per-

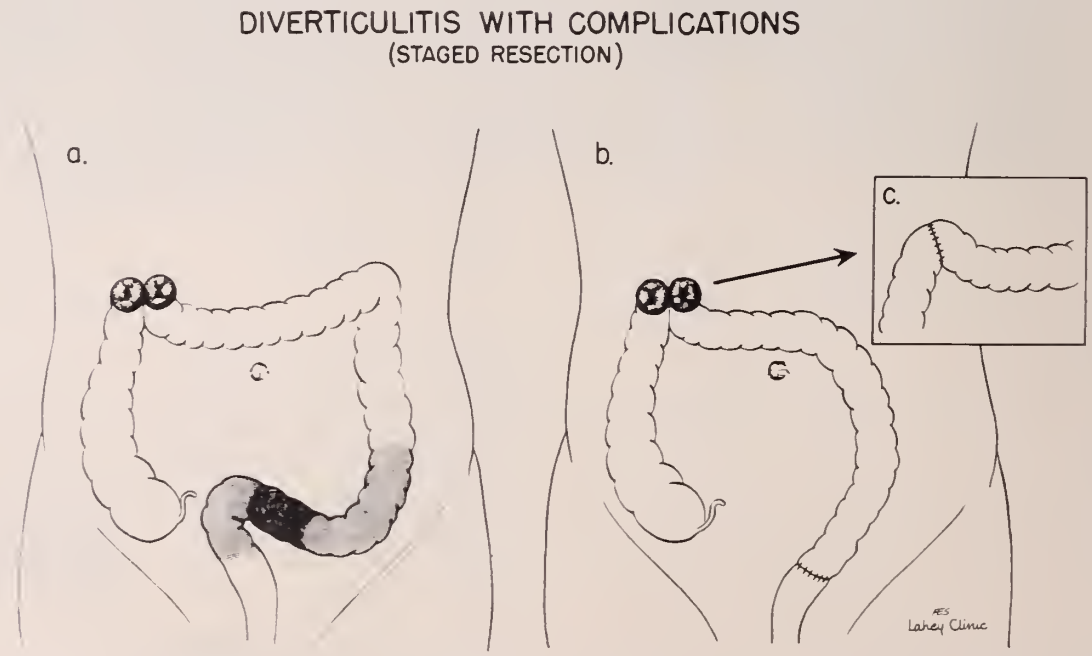


Figure 1. **a**, Proximal colostomy established in transverse colon; bowel completely divided. **b**, Resection of diseased bowel with anastomosis is carried out four to six months later. **c**, The colostomy is closed by end-to-end anastomosis and the bowel restored to the peritoneal cavity.

mits differentiation of these two conditions. In most instances reliance must be placed on the barium enema study. Unfortunately, in 15 to 20 per cent of patients the roentgenologist cannot distinguish with certainty between carcinoma and diverticulitis of the sigmoid. In another 5 to 10 per cent, the barium enema simply reveals obstruction of the colon which could be due to either carcinoma or diverticulitis. Multiple perforations almost certainly are the result of diverticulitis (Fig. 2). When the typical lipping of a carcinoma of the sigmoid is present, the diagnosis is rarely in doubt (Fig. 3). If the barium also fills the bladder because of a fistula between the colon and bladder, the patient is much more likely to have diverticulitis than cancer (Fig. 4). On the other hand, the barium enema examination at times will deceive even an experienced diagnostician. Since the two lesions involve the same area in the colon, it is not strange that occasionally both may be present (Fig. 5).

Even at operation it may still be impossible to distinguish between these two conditions. Under these circumstances



Figure 2. This patient has remained well following a three stage resection of the descending colon and sigmoid.



Figure 3. Typical appearance of a carcinoma of the bowel on the spot film.

the type of resection to be carried out presents a real problem to the surgeon. A few years ago in an effort to obtain some additional help in such situations we [2] reviewed in detail the histories of 50 patients with diverticulitis who came to surgery, and 50 patients with carcinoma of the sigmoid. Despite many similarities, we noted a few points which may be of help in an equivocal case. Abdominal pain was found to be three times as frequent in patients with diverticulitis as in those who had carcinoma. Gross rectal bleeding, on the other hand, was three times more common in patients with carcinoma. The duration of symptoms averaged 40.2 months in patients with diverticulitis and only 8.5 months in patients with carcinoma (Table 1).

Morbidity and Mortality

The indications for surgery in complicated diverticulitis are obvious. It is equally obvious that, in spite of the reduction in mortality rate, the morbidity associated with the surgical treatment of diverticulitis remains high. A patient



Figure 4. On barium enema examination the barium passed rapidly from the colon into the bladder through the fistula.



Figure 5. The abnormal appearance of the sigmoid is due to diverticulitis. In the center of this area is a large malignant polyp.

TABLE 1
DIVERTICULITIS AND CARCINOMA OF THE COLON

	Diverticulitis	Carcinoma
Age	53.5 years	61.5 years
Sex	62% males	46% males
Abdominal pain	74%	26%
Abdominal colic	80%	38%
Rectal bleeding	22%	64%
Duration and symptoms	40.2 months	8.5 months
Nausea and vomiting	higher	
Chills and fever		

with obstruction, a perforation or a fistula will spend two weeks or more in the hospital at his initial hospitalization. He then goes home for a period of four to six months with a colostomy. During this time he may or may not return to work. He must then return for a major operative procedure. Finally, the colostomy must be closed, either at this time or at a third admission. The total cost in hospital and medical care is tremendous, and could lead to a financial crisis in many families.

One way in which this morbidity can be reduced is by avoiding operative procedures that are known to be unsatisfactory for the surgical treatment of this disease. Incision and drainage of an abscess due to a perforation of the colon, without a colostomy, usually results in a permanent fistula. Suture of a perforation or excision of an existing fistula is rarely successful. Closure of a colostomy without a subsequent resection is likely to result in recurrence of symptoms and the development of another complication. Thirty per cent of the patients on whom we have operated during the last ten years gave a history of one or more of these operative procedures. Some patients had as many as seven or eight operations, and they still required a colostomy followed by resection and closure of the colostomy before a cure was obtained.

Our best opportunity for reducing the morbidity rate for the surgical treatment of this disease is to operate on patients with intractable diverticulitis before these serious complications occur. To a considerable degree, we can identify the patient in whom obstruction, perforation or a fistula is likely to occur. He is the patient with diverticulitis who is under 50 years of age; whose attacks of diverticulitis are increasing in frequency or in severity; who shows an increasing degree of spasm or narrowing on barium enema study; the patient who begins to have dysuria or pain in the bladder with his attacks of diverticulitis. If these patients are operated on before complications occur, resection of their diseased colon can be carried out in one operative procedure. They rarely spend more than two weeks in the hospital, and their disease is cured. Finally, the risk of attributing the symptoms of a carcinoma to an old, recurrent diverticulitis is eliminated.

Earlier operation for patients with divertculitis can be justified *only* if it does not increase the mortality rate. During the last ten years [1] we have operated on 131 patients for diverticulitis; two deaths occurred, a mortality rate of 1.5 per cent. Both patients had a proximal colostomy for a perforation of the sigmoid. Because carcinoma could not be ruled out, each had a resection of the colon three weeks later. In both cases, the resection was carried out in an infected field, and generalized peritonitis developed. One patient died from coronary occlusion on his twenty-first postoperative day; the other patient died six months later from prolonged sepsis. During the last seven years 102 patients in this group were operated on with no deaths. It is significant that 69 of these patients had a one stage primary resection [1] (Table 2).

TABLE 2
MORTALITY

	Number of Patients	Deaths	
		Number	Per Cent
Total	131	2	1.5
Last 7 years	102	0	0
One stage resection	69	0	0

Summary

Patients with diverticulitis who have complete obstruction, a perforation, or a fistula into the bladder or vagina, must be operated on. The mortality rate for the surgical treatment of even these seriously ill patients is now less than 2 per cent. This is largely due to the proven safety of a staged operative attack. Unfortunately, the morbidity rate associated with the surgical treatment of diverticulitis remains high. It can be improved by avoiding operative procedures which are unsatisfactory for the surgical treatment of this disease. The best opportunity to reduce the morbidity rate lies in earlier operative for patients with intractable diverticulitis. If surgery is advised for selected patients with persistent or recurrent diverticulitis before a complication develops, they can be cured by a one stage operative procedures with no increase in the mortality rate.

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Liver Function Tests In Congestive Heart Failure

• Today, it is possible for the clinician to employ more tests in the evaluation of disease than ever before. However, as the author points out, the interpretation of these tests must be correlated with the clinical and physical findings.

CHARLES B. MOORE, M. D.†
New Orleans

IN 1942, speaking before a meeting of the American Medical Association, Chavez [1] said:

"One of the organs that suffers most in heart failure is undoubtedly the liver. Its enlargement is the general rule in right congestive heart failure. . . . But if it is easy to appreciate the anatomic alterations — enlargement, tenderness, hardness and the like—the functional attack often passes unnoticed or at least is clinically underestimated. It is only in the advanced stages when subicterus, or rarely icterus, appears or when digestive disturbances become important that the physician directs his attention toward the liver and admits the existence of hepatic insufficiency. Nevertheless, at much earlier stages of congestion laboratory procedures already show the functional attack of the gland."

In the ensuing years, much progress has been made in the laboratory evaluation of abnormal hepatic function. Currently available procedures permit accurate appraisal of the many facets of hepatic function. Application of some of these to determine hepatic function in patients with congestive heart failure has confirmed the myriad abnormalities present in this condition.

Some of the more useful laboratory examinations were employed in a series of patients with congestive heart failure in an effort to determine which tests are the most helpful in clinical practice and to document further the functional alterations that result when hepatic congestion with or without reduced hepatic blood flow is imposed upon a normal liver.

Material

This study includes 60 consecutive patients with congestive heart failure seen by me at Ochsner Foundation Hospital from August 1958 to January 1960. Routinely, a complete history was taken and complete physical examination was done. An attempt was made to exclude patients with a history of hepatic disease. The severity of the congestive heart failure was determined clinically. Routine laboratory procedures included electrocardiography, roentgenography of the chest, complete blood count, urinalysis, fasting blood sugar, blood urea nitrogen determination, fecal examination and serologic test for syphilis. In addition, the following liver function tests were performed initially, and in most instances, were repeated after therapy: bromsulphalein, serum bilirubin, total protein and albumin globulin ratio, serum glutamic oxalacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), alkaline phosphatase, and cephalin flocculation. Twenty-four patients also had thymol turbidity tests, 18 zinc sulfate tests, and 12 serum electrophoretic patterns.

The patients were classified into four groups according to the severity of the congestive heart failure as judged clinically. Group 1 included 8 patients in whom the diagnosis of congestive heart failure was confirmed retrospectively after the therapeutic response was noted. Group II included 22 patients with definite fluid

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† From the Section on Cardiology, Ochsner Clinic, New Orleans.

retention, ankle edema, a slightly enlarged liver and only minimal limitation of activity. Group III included 21 patients with extensive fluid retention, definite limitation of activity and a large liver. Group IV included 9 patients with ascites and hydrothorax in addition to all the criteria of Group III. Patients with isolated left ventricular failure were excluded from this study. The methods used for the liver function tests and the normal values for these tests in our laboratory are shown in Table 1.

Results

Part. 1. Results of the tests will be discussed in relation to the frequency with which they were abnormal. Bar graphs were used to plot the distribution of the values within each of the four separate clinical categories for the procedures that seemed to bear some correlation with the clinical evaluation. These include serum glutamic pyruvic and glutamic oxalacetic transaminase, bromsulphalein, bilirubin, and alkaline phosphatase.

The serum glutamic pyruvic transaminase test is a measurement of the activity of the enzyme in its simultaneous conversion of alanine to pyruvic acid and alphaketoglutaric acid to glutamate. This enzyme is present chiefly in hepatic cells, and the test was introduced to help differentiate rises in glutamic oxalacetic transaminase due to hepatic disease from those due to other conditions. Of the 60 patients, 91.8 per cent had SGPT levels above the normal level before therapy. A definite relationship between the results and clinical appraisal of severity can be seen in Figure 1. In addition, a definite relationship between the mortality rate and SGPT levels was evidenced by the fact that all 6 patients who died

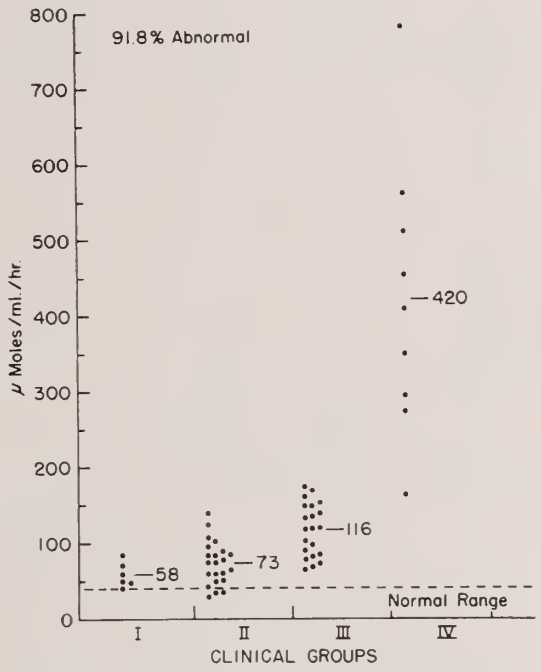


Figure 1.—Serum glutamic pyruvic transaminase levels in four groups of patients with congestive heart failure.

TABLE 1
NORMAL VALUES FOR METHOD OF LIVER FUNCTION TESTS USED

Liver Function Test	Normal Values
Bromsulphalein (2)	<6% retention/45 min.
Total protein (3)	6.0-8.0 Gm./100 ml.
Albumin	3.6-5.4 Gm./100 ml.
Globulin	1.5-3.4 Gm./100 ml.
Bilirubin (4)	<1 mg./100 ml.
SGOT (5)	<118 micromoles/100 ml./ hr.
SGPT (5)	<40 micromoles/100 ml./hr.
Alkaline phosphatase (6)	<4 Bodansky units
Cephalin flocculation (7)	2 plus or less/48 hr.
Thymol turbidity (8)	<6 Maclagan Units
Zinc sulphate (9)	<10.5 units
Serum electrophoresis (10)	Albumin 44-60%
	Alpha 1 Globulin 3-6%
	Alpha 2 Globulin 8-16%
	Beta Globulin 10-17%
	Gamma Globulin 9-27%

had levels of SGPT more than four times normal.

Serum glutamic oxalacetic transaminase, an enzyme normally more active in the serum than SGPT, is also more widely distributed. It is involved in the simultaneous conversion of aspartic acid to oxalacetic acid and alphaketoglutaric acid to glutamate. As can be seen in Figure 2,

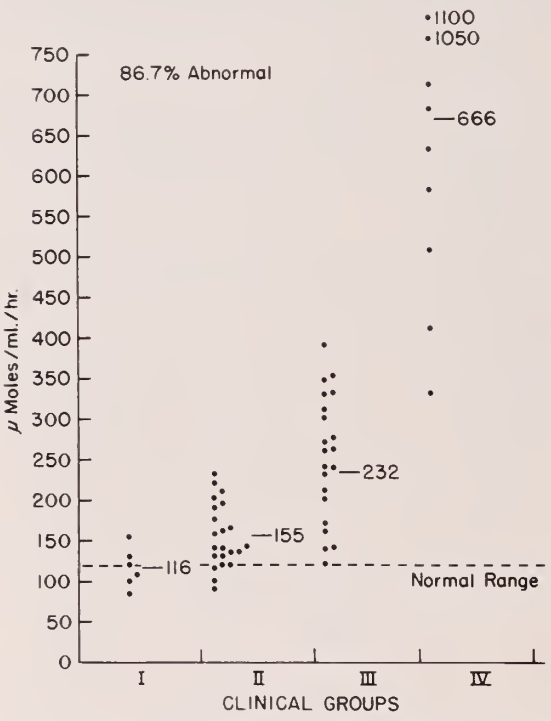


Figure 2.—Serum glutamic oxalacetic transaminase levels in four groups of patients with congestive heart failure.

the levels were above normal in 86.7 per cent of the cases and again good correlation was present between the degree of abnormality and clinical evaluation of severity of the disease. This test also seems to be a fairly sensitive prognostic guide, as levels more than four times the normal were often associated with fatalities.

The *bromsulphalein* test is a measure of the excretory function of the liver in the presence of normal hepatic blood flow. This latter condition is not always present in congestive heart failure and elevated bromsulphalein retention probably represents both decreased hepatic blood flow and altered parenchymal function. The bromsulphalein values were abnormal in 86.7 per cent of the cases and closely paralleled the abnormalities of the SGOT and SGPT, as well as the clinical appraisal of the severity of the process (Fig. 3). In addition, the bromsulpha-

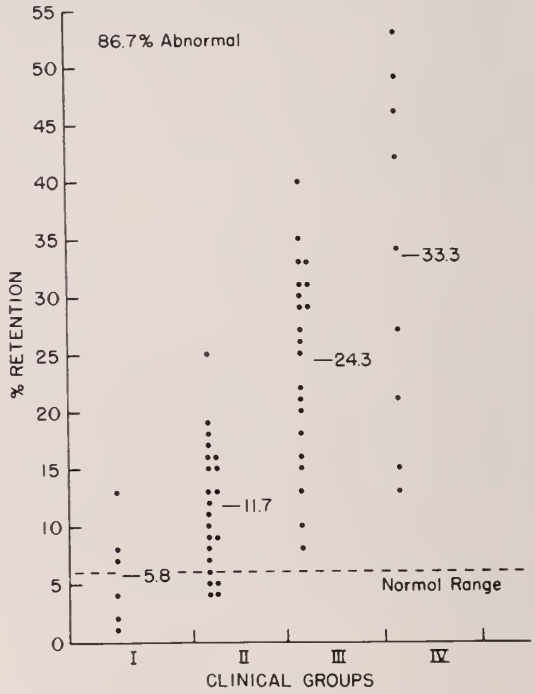


Figure 3.—Bromsulphalein retention in four groups of patients with congestive heart failure.

lein test seemed to be the best guide to prognosis, since all patients with bromsulphalein retention of more than 34 per cent died.

Bilirubin. The levels for total bilirubin are shown in Figure 4; again, the relationship between these and clinical appraisal is obvious. No pronounced elevations will be noted, however, and only about 20 per cent of the patients had clinically detectable jaundice, that is, a level of more than 2.5 mg./100 ml.

Alkaline Phosphatase. In Figure 5 it can be seen that although fair correlation exists between the height of the alkaline phosphatase and the severity of the disease, there are frequent normal values in the more severely ill patients. Only 40 per cent of the patients had abnormal values.

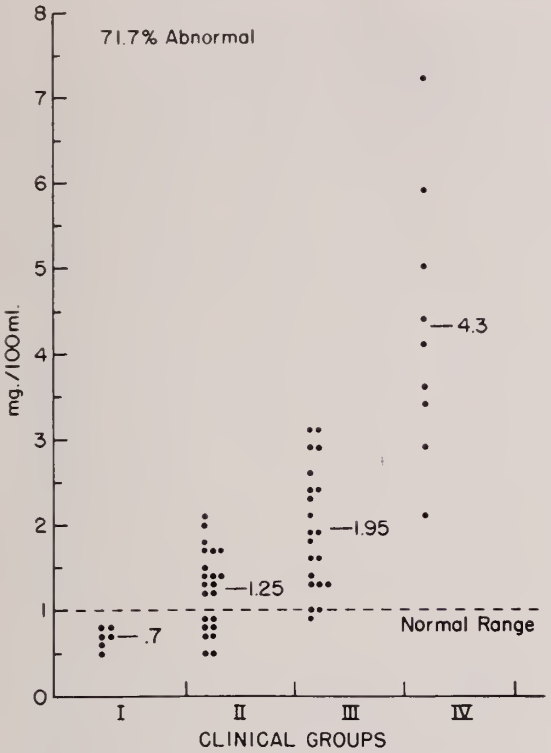


Figure 4.—Total serum bilirubin levels in four groups of patients with congestive heart failure.

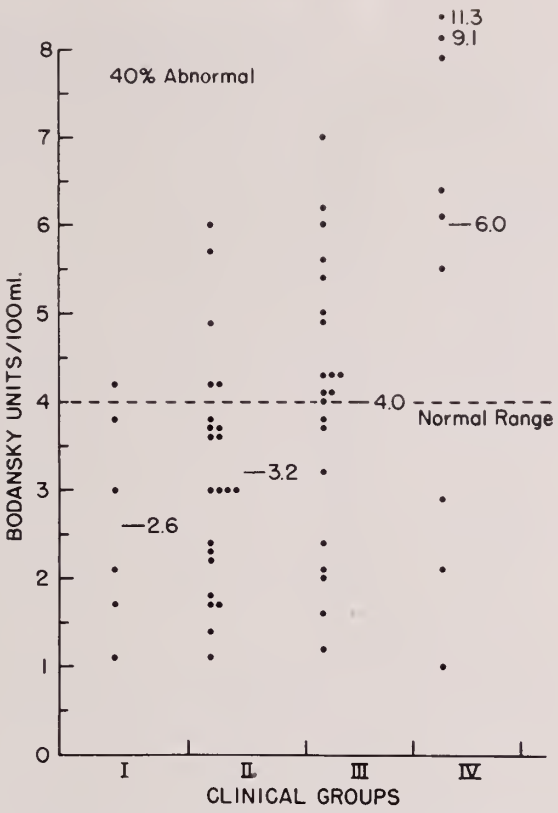


Figure 5.—Serum alkaline phosphatase levels in four groups of patients with congestive heart failure.

Total Protein and Albumin-Globulin. Although the values tended to be slightly lower than normal for the serum albumin fraction and slightly higher than normal for the globulin fraction, no predictable change was detected and, as standardly performed, this determination seems to be of no aid in clarifying the problem of congestive heart failure.

Flocculation Tests. Three tests, the cephalin-cholesterol, zinc sulfate, and thymol turbidity were performed. There was no relationship between the values of any of these tests and the clinical severity of the disease. Moreover, normal values were frequently encountered in critically ill patients. Sixteen per cent of the patients had abnormal cephalin flocculation values, 21 per cent thymol turbidity and 12 per cent zinc sulfate values.

Serum Protein Electrophoresis. As noted for the chemical determination of protein fractions, there was a slight tendency for the serum albumin levels to be lower than normal and the globulin fraction to be slightly elevated. This was not statistically significant by either method.

Part 2. Because these changes were thought to be due to congestive heart failure alone, it was believed that determinations should be obtained after therapy of the congestive heart failure in the patients in whom results were abnormal. The results of these studies for the five tests which showed a significant correlation with the clinical state are presented in Table 2. As can be seen, the values fell toward normal in every instance, although in the more severely ill patients, lesser degrees of abnormalities persisted after control of the congestive heart failure. This is considered to be presumptive evidence of cardiac cirrhosis in these patients.

Discussion

The large number of separate functions performed by the liver is well known. "Batteries" of liver function tests have

TABLE 2
ABNORMAL RESULTS OF FIVE LIVER FUNCTION TESTS BEFORE AND AFTER TREATMENT OF CONGESTIVE HEART FAILURE

		Clinical Groups							
		I		II		III		IV	
		B	A	B	A	B	A	B	A
Glutamic pyruvic transaminase	Ave.	58	37	73	29	116	31	420	84
	Range	40-84	19-44	28-140	21-42	64-174	18-54	162-780	40-94
Glutamic oxalacetic transaminase	Ave.	116	97	155	96	232	112	666	164
	Range	84-154	78-112	90-231	90-116	120-390	84-130	330-1100	98-222
Bromsulphalein	Ave.	5.8	3.1	11.7	2.9	24.3	3.5	33.3	8.2
	Range	1-13	1-6	4-25	1-5	8-40	2-8	13-53	4-16
Bilirubin	Ave.	0.7	0.7	1.25	0.7	1.95	0.94	4.3	1.3
	Range	.5-.8	.5-.8	.5-2.1	.5-.9	.9-3.1	.6-1.1	2.1-7.2	1.1-1.6
Alkaline phosphatase	Ave.	2.6	2.5	3.2	3.0	4.0	3.3	6.0	3.9
	Range	1.1-4.2	1.1-3.9	1.1-6.0	1.0-3.8	1.2-7.0	1.0-4.1	1.0-11.3	1.0-5.4

B = Before treatment
A = After treatment

been devised to measure these various parameters. The different types of tests may be divided into those related to: disturbance of albumin and globulin synthesis, specific protein synthesis, disturbed lipid metabolism, disturbed carbohydrate metabolism, enzyme alterations, excretory function, and biliary obstruction.[11] The detected abnormalities presented here fall chiefly into the realm of altered enzyme control, altered excretory function and abnormalities related to biliary obstruction.

The pathologic alterations in the liver after long-standing passive congestion are well known. The alterations of hepatic function associated with passive congestion are less well known but have been documented.[1, 12-19] Table 3 contains some of the results of others who studied this problem, as well as the abnormalities detected in the present study. The slight variations in the percentage of abnormalities noted is probably related to differences in the selection of patients. All authors except one [15] agree that the bromsulphalein is the most sensitive test of hepatic dysfunction in congestive heart failure.

The addition of the SGOT and SGPT tests to the physician's "battery" makes available two more sensitive tests of liver function. Although these tests suffer somewhat from lack of specificity, in the clinical setting of edema and congestion, it is helpful to know the height and duration of elevation of these two enzymes in confirming the presence of hepatic congestion. They tend to become abnormal before overt clinical evidence of heart failure is present.

The large number of abnormalities demonstrated to be present at some stage in congestive heart failure can be seen in Table 3 and points to the great alterations in cellular physiology present in this condition. If we turn from a simple measurement of the abnormalities to an attempt at understanding the pathophysiology involved, many problems and contradictions become immediately apparent. Although it is generally agreed that the bromsulphalein test is a good measure of altered function in passive congestion, the mechanism of this elevation is not known. It has been attributed to cellular hypoxia secondary to decreased hepatic blood flow by some [20] and to a combination of cellular hypoxia and hemorrhage from distended sinusoids by others.[12] Recently, however, in admittedly an artificial system, Brauer and associates [21] showed that bromsulphalein clearance by hepatic parenchyma is minimally affected by passive

TABLE 3
PERCENTAGE OF ABNORMALITY OF LIVER FUNCTION TESTS IN CONGESTIVE HEART FAILURE BY VARIOUS INVESTIGATORS

	Sherlock [12]	Felder [13]	Chavez [1]	Evans [14]	Wahl [15]	Moore
Glutamic Pyruvic Transaminase	—	—	—	—	—	91.8
Glutamic Oxalacetic Transaminase	—	—	—	—	—	86.7
Bromsulphalein	?	85	100	96.1	48	86.7
Bilirubin	68	52	85	26.4	41	71.7
Alkaline Phosphatase	10	46	—	—	—	40
Urobilinogen	92	—	75	—	—	—
Total Protein	—	29	—	—	80	31
Albumin	28	—	—	63	—	31
Globulin	42	18	—	23	—	28
Prothrombin Time	—	—	—	—	16	—
Takata-ARA	—	—	63.3	—	—	—
Thymol Turbidity	—	31	—	36.5	10	21
Cephalin Flocculation	—	22	—	27.2	57	16
Zinc Sulfate Turbidity	—	—	—	—	—	12

congestion if the effect of blood flow is eliminated. He concluded from his studies that distention of the tissues and consequent strain upon its structural elements, and the interposition of a fluid barrier between oxygen-carrying erythrocytes and oxygen-consuming cells in certain key regions are the two chief effects of passive congestion. The difference between the laboratory and clinical observations is probably attributable to the fact that hepatic blood flow is not maintained at a normal rate in patients with congestive heart failure.[22]

The problem regarding transaminase is also confusing. Initial thought was that the transaminases were excreted into the bile, since bile was shown to have a high content of these enzymes.[23] However, recently, this was questioned by Linde,[24] who was unable to confirm the high levels in bile. Certainly, disproportion exists between production and excretion in such conditions as acute myocardial infarction and acute infectious hepatitis. However, in the conditions characterized by lower and chronically elevated values for the enzymes, the exact cause for the elevation is not apparent. Chronic, low grade elevation of the SGOT has been reported in obstructive jaundice [25] and it may be that the mechanism of elevation of these enzymes in congestion is similar to that in obstruction of the biliary tree. These abnormalities are considered under the discussion of the rise in bilirubin. The possibility also exists that the liver actively secretes these enzymes into the blood stream as a response to chronic low grade damage both in obstruction of the biliary tract and in chronic passive congestion. This would be in line with a similar mechanism postulated to explain the rise in alkaline phosphatase in certain diseases of the liver.

In studying the cause of the elevation of bilirubin, Kugel and Lichtman,[26] in 1933, concluded that the factors of primary importance were: (1) duration and type of congestive heart failure and (2) lo-

cal factors favoring formation and absorption of bilirubin (infarction, hemolysis and infection). Sherlock [12] concluded that there are at least three separate mechanisms for the rise in serum bilirubin in congestive heart failure. One was attributed directly to inability of the parenchymal cells to excrete the bile pigment. The second relates to obstructive jaundice secondary to pressure on the outside by distended veins and by inspissated bile thrombi from within. The evidence of actual obstruction of the biliary tree is poor, however, and this mechanism probably plays only a small part in the production of jaundice. The third mechanism involves excessive production of pigment secondary to infarction—usually in the lungs—and the inability of the already damaged liver to excrete these pigments. This latter factor of impaired hepatic function is obviously as important as the excess production, since introduction of excess loads of pigment alone does not result in jaundice.[27] In a study of the problem of hyperbilirubinemia in congestive failure, Schalm and Hoogenboom [28] found that as the congestive heart failure subsided, if the bilirubin remained elevated, permanent hepatic damage was usually present.

Careful scrutiny of the abnormalities noted in this study will reveal that the changes in liver function tests in congestive heart failure are identical to those seen in cirrhosis, regardless of the etiology. There are no pathognomic changes in liver function tests which will make a diagnosis of congestive heart failure. However, the importance of these recorded abnormalities lies not so much in the clinical diagnosis of congestive heart failure, although on occasions they may be the initial clue to the problem, but in the knowledge that severe derangements in hepatic function may occur as a consequence of congestive heart failure alone. Therefore, before any exhaustive study of a patient is undertaken because of the finding of abnormal liver function, some thought should be given to congestive heart failure as a cause of this abnormality. The manifestations of congestive heart failure on liver function are so protean that congestive hepatomegaly must be considered routinely in patients with abnormalities of hepatic clearance or excretion of substances.

Summary

Liver function tests were performed on 60 consecutive patients with various degrees of congestive heart failure. The degree of severity of the process was assayed clinically.

In 5 of the tests (SGPT, SGOT, bromsulphalein, alkaline phosphatase, and bilirubin) there was a relationship between the severity of the heart failure and the degree of abnormality. The most striking correlation occurred between the severity and the SGPT, SGOT and bromsulphalein. In addition, the bromsulphalein test seemed to be an excellent guide to prognosis in that all patients with bromsulphalein levels greater than 34 per cent died. The SGOT and SGPT appear to become abnormal early in the course of hepatic congestion.

Results of the flocculation tests, which depend upon various alterations of the serum proteins, and the measurement of serum proteins themselves, showed poor correlation to the clinical appraisal of the severity of the disease and provided little help in arriving at a diagnosis of congestive heart failure. The abnormalities listed are identical to those seen in cirrhosis.

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Discussion

Dr. George M. Anderson (Lake Charles): I want to thank Dr. Moore for bringing to our attention the alterations and interpretations of liver function tests occurring with congestive heart failure.

Elevations in transaminase determinations occur not only in acute myocardial infarction but also in cirrhosis, viral hepatitis and very early congestive heart failure.

Serum transaminase determinations are most useful in the study of patients with acute chest pain, particularly those whose electrocardiograms indicate old myocardial damage. Elevated transaminase determinations in these cases may be due to early heart failure or cirrhosis and not to actual myocardial infarction.

Transaminase determinations obtained in patients who experience tachycardias of over twelve hours may be elevated due to heart failure and liver anoxia which may not be detected by physical examination.

As always laboratory determinations are important in the study of patients but must be correlated with the history and physical examination to give them the proper interpretation.

Toxemic Diseases and Their Treatment

W. R. Sevier, M.D., Jonesboro, Tenn.

"If I am correct in the views expressed touching the practicability of disinfecting the blood, it will readily occur to the intelligent reader that, in the properly regulated use of the muriated tincture of iron, with or without a super-addition of hydrochloric acid as may be found best, will be found a plan of protection from both cholera and yellow fever far more efficient and reliable than that afforded by quarantine and one, too, which will not in any measure disturb the peace of society nor the interests of commerce. I beg that I may not be esteemed sanguine, without reason, when I express a confident hope that this fact will be established."

New Orleans M. & S. J. 7:849 (March) 1880.

Hypersensitivity to Marsh Elder: Difficulties Encountered in Patch Testing

• The necessity for testing with materials that the patient is in contact with, when testkits prove unavailing, is borne out by the report of this case

OLLIE WILLIAMS, M. D.
RICHARD SPEAIRS, Ph.D.
H. WHITNEY BOGGS, M. D.
Shreveport

ALLERGIC eczematous contact dermatitis is the most common skin condition seen by the practicing physician. The most practical and valuable test procedure used in the diagnostic approach to this problem is the patch test, and frequently we can rely on materials that the patient handles either at work or at home, or which the individual is in contact with in the environment, such as herbaceous trees. When it is necessary to resort to standard antigens prepared by commercial laboratories, we must be sure that contactants of our region are included. When considering various "weeds" and plants, of which there can be numerous subspecies of each genera, failure to include all of the known offenders in a regional area can be misleading to the investigator. We have an interesting case which is enlightening in this respect.

Case Presentation

A 37 year old W.M. oil field worker was first seen by us in April, 1958, with history of recurring generalized dermatitis and hay fever of fifteen years' duration, there being an increase in severity of symptoms for the past three years. He had been treated by a number of physicians over the years, treatment consisting of steroids, ACTH, antihistamines, sedatives, tranquilizers and various types of topical treatment. The patient noted that the dermatitis responded minimally to therapy on occasions and seemed to improve about January or February of each year, only to flare up during late spring or early summer.

Physical examination revealed a generalized weeping eczematoid dermatitis, most severe on the dorsum of the hands and forearms, V-area of the chest and face. Allergic contact dermatitis was suspected, but complete testing with scratch and patch tests to the known plants, broadleaf weeds, grasses, trees, as well as foods and materials that he handled at work, were negative. After repeatedly questioning the patient about possible contactants, he mentioned a "weed" that seemed to make the hay fever worse. Patient was patch tested to a small amount of this weed and within six hours the material had to be removed due to the terrible itching. Examination the following day revealed a 4-plus bullous reaction, classical of the positive patch test reaction. (Figure 1).

This particular weed was identified as Iva microcephala Nutt., one of 15 known species of marsh elder. Since the allergy testkit contained "Marsh Elder", and was prepared by a private concern, we reasoned that this patient apparently was sensitive only to this particular species of Marsh Elder, which was not present in the antigen provided. Testing with "Marsh Elder" antigen prepared by Graham laboratories of Dallas, Texas, produced a reaction identical to that obtained with the weed itself, thus the reaction was quite specific for this species of marsh elder, and no cross antigenicity between the antigen produced by the private concern and that produced by the plant itself (and which was present in Graham's testkit) was noted.

Botanical Aspects

The plant in question was identified as *Iva microcephala Nutt.*, according to Small.[2] It is a member of the tribe Heliantheae of the family Compositae. Related common genera include *Xanthium* (Cocklebur), *Ambrosia* (ragweed), *Rudbeckia* (Black-eyed Susan), *Cosmos* and others. Gleason [1] notes that there are perhaps 15 species of *Iva* native to North and South America. Eight species and one variety are recorded in the literature

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.



Figure 1



Figure 2

of the flora for the area east of the Rocky Mountains. Seven of these species have been reported in the south and southeastern states. Three species, *I. augustifolia*, *I. asperfolia* and *I. microcephala* have been reported only from areas adjacent to the Gulf from Pensacola, Florida, westward to Texas, extending about 400 miles inland. These plants are found in dry pinelands and waste places and bloom from summer on to the first killing frost, with flowering occurring until the winter kill of the plant.

Description of the plant is as follows:

Iva microcephala Nutt. Annual glabrous or nearly so, slight. Stems erect, 3-9 dm, tall, much branched above, the branches slender, erect or ascending; leaves often alternate; blades narrowly linear, 2-5 cm. long, acute, entire, or slightly toothed: heads numerous, sessile or nearly so: blades narrowly linear to linear filiform, surpassing the heads; involucres 3-6 flowered, campanulate, 2 mm. high; bracts oblong to cuneate, obtuse to retuse at the apex; fructiferous flowers 3; corolla nearly 2 mm. long; achenes about 1 mm. long.

Discussion

There are numerous patients seen by dermatologists and allergists whose history and physical findings suggest allergic contact dermatitis, yet innumerable testing procedures fail to reveal an etiological agent. As in our patient, testing with materials that the individual is in contact with can prove rewarding. Contact dermatitis of the hands is a frequent cause of trouble with housewives, and persistent testing to the numerous materials used in the home can often reveal unsuspected allergies. Actually the type and number of contactants are legion, and what treatment is more specific than simple avoidance of contact to which an individual may be hypersensitive. Invariably a long standing contact dermatitis will complicate with secondary neurodermatitis, as did our patient, but this should not misguide the diagnostic approach to the problem. Lymphomas frequently produce findings identical in appearance to contact dermatitis, as do rarer conditions that we see, such as polymorphic light eruption. If suspicious of an allergic etiology every means available

should be exhausted before ruling out this possibility.

Testkit material is generally identified by common names. This practice is satisfactory for a number of the plants in which there is no duplication of the use of the name for other species in the same genus or even other genera; however, in this case three species of *Iva* and one of *Baccharis* have the term "Marsh Elder" incorporated in the common name as noted below:[5]

Iva fructescens var. *oraris* Bartlett
Common Marsh-elder or High-water Shrub

Iva ciliata Wild
Rough Marsh-elder or Sumpweed

Iva xanthifolia Nutt.
Marsh-elder or False ragweed

Baccharis halimifolia L.
Marsh-elder or Groundselbush

The other species of *Iva* have not been designated by a common name, but would likely have the name "Marsh Elder" included in their common nomenclature should a common name be ascribed to them.

Summary

A patient with long standing chronic generalized dermatitis was found to have an allergic contact dermatitis due to a species of Marsh Elder common only to the Gulf Coast area; he had been followed for twelve years with a diagnosis of neurodermatitis.

The correct diagnosis was established on the basis of positive patch test to the weed itself, having been missed when the patient was tested to an allergy testing kit provided by a private concern. Specific antigenicity of this regional plant is established due to the fact that the individual failed to react to the "Common Marsh Elder" antigen supplied in a standard testkit.

Patient has been started on a desensitization program, and with avoidance of this weed should eventually be relieved of his problem.

Conclusions

When evaluating patients with possible allergic syndromes, every means should be exhausted to establish what offending antigen is causative, and if standard testkits are unrevealing, patch tests to materials that an individual handles at work or at home, or comes in contact with in the environment, should be carried out.

Also, companies preparing testkits should keep in mind the fact that there are numerous species of various types of herbaceous trees, grasses, and pollens, these being species specific or subspecies specific in their antigenicity; yet no cross antigenicity may be associated with the more common antigens used in their testkits.

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Discussion

Dr. Phillip R. Loria (New Orleans): I think Dr. Williams is to be congratulated for his extensive botanical research as regards this case. It was with a great deal of foresight that he disregarded previous patch test results with the idea of trying the local antigen. He is to be commended for this basic and all-important approach to a patient with an allergy. The fact that he used the local antigen may well be a tremendous boon to a patient with an eruption of fifteen years' duration.

Those patients with a generalized skin eruption or one predisposed to the typical atopic areas have proven to be very difficult as regards management. It is extremely difficult at times to wait for the condition to subside sufficiently in order to do patch tests. Under such circumstances perhaps one is justified in doing the patch test anyway as the condition can usually be brought under control by using corticosteroids if it should flare.

We are all familiar with the concept of "broadening of the base" in allergy. While the allergen discussed in this case may be a secondary allergic factor, yet it is a most tangible bit of evidence on which specific therapy may be designated. It may be that the future will reveal other factors as well.

An interesting facet that may be more thoroughly investigated would be the results obtained with this patient as regards the passive transfer test and precipitin test as discussed by Cohen in his recent article in the A.M.A. Arch. of Dermat., (March) 1959, in which he discussed two patients with seasonal ragweed dermatitis and in whom he showed these various factors to be in existence.

There Is Danger in a Kiss

Very many of the diseases to which we poor mortals are liable can be prevented, provided proper efforts are put forth to meet that most desirable end.

This truth no one will gainsay, still, the subject has not yet attracted the attention its importance demands, and it appears now to be the especial duty and province of those of our profession who live in this day of preventive medicine to erect finger boards along the highways of life, which shall point out clearly and plainly the known causes of disease. * * *

There is oftentimes danger in a kiss, notwithstanding Lord Byron, that prince of poets, in the days gone by, expressed the wish

"That womankind had but one rosy mouth,
To kiss them all at once from North to South."

Ah! it was a bad wish even for so bad a man, and so faithless a lover as he, yet it does seem that he was not peculiar in this respect, since in this glorious age of enlightened progress, such sickly sentimentality is no less popular, and has no fewer votaries than in the days of old, because kissing, **kissing**, KISSING is still the order of the day.

The ladies kiss each other upon every offered opportunity, every flimsy pretext; the poor little children, and even the babies are made to do likewise in compliance with the requirements of genteel society, and the men too, would do the absurd thing at every meeting were it not for the lamentable truth that they are obdurate and have not yet been educated up to the sound, civilized and philanthropic principle of "dog eat dog."

Payne, R. L.: Quoted in New Orleans M. & S. J. 7:714 (January) 1880.

Primary Carcinoma of the Liver Associated With Laennec's Cirrhosis A Case Report

• Primary carcinoma of the liver is relatively rare in the Untied States, and in approximately two-thirds of the cases reported cirrhosis is present.

ROBERT KAPSINOW, M.D.
Lafayette

PRIMARY carcinoma of the liver continues to be a challenging disease because it is comparatively rare in this country. It presents major diagnostic, as well as therapeutic problems, since few cancers have a poorer prognosis once the disease is recognized. Virchow is credited with the dictum that such organs which are the frequent sites of metastases, are rarely the sites of primary neoplasm. This is particularly true of the liver, for while metastatic malignancy is frequent, primary carcinoma is rare indeed. Moreover, primary carcinoma is also unique because of its geographical and racial distribution. All evidence suggests that its incidence is highest in countries inhabited by the yellow and dark-skinned races [8] and is lowest in the United States and Western Europe. Even in the U. S., the incidence in the American Negro is 0.44 per cent, while in the general population it is 0.26 per cent.

Wilson [5] reports that only 20 cases of primary carcinoma of the liver were found in 35,995 admissions in ten years. Sanford [6] quotes Gustafson, who found 62 cases of primary carcinoma of the liver occurring in Bellevue Hospital in the performance of 24,400 necropsies. This is an incidence of 0.25 per cent. In these cases cirrhosis was present in 64.1 per cent of the liver cell variety and in 33.3 per cent of the cholangioma group. Schupach and Chappell [7] observed 14 cases of primary liver carcinoma in 797 consecutive necropsies at the Kennedy Veterans' Hospital since 1946. This incidence of 1.76 per cent is in striking contrast to the 0.26 per cent found for Americans generally. Only in the Asiatics and Africans is the incidence so high. The incidence of primary liver cracinoma varies somewhat percentagewise in the different reports which were studied. However, the general impression obtained was that carcinoma as a primary lesion of the liver is relatively rare, especially when the types are considered.

Cirrhosis is both a precursor and a consequence of primary liver carcinoma. The exact relation, however, is not known. In a survey of the literature, it is estimated that in approximately two-thirds of the reported cases of primary liver carcinoma, an associated cirrhosis is present, which is of the Laennec type. It has been postulated that the rapid regeneration and repair that occur in cirrhotic livers may lead to carcinomatous change. Galluzi et al.[1] found that 10 of 16 patients with liver carcinoma had Laennec's cirrhosis. Macdonald [2] stated that in 72 cases clinically reviewed, the following types of cirrhosis were found: 21 fatty nutritional cirrhosis, 20 healed acute yellow atrophy, 6 hematochromatosis, 4 undetermined type cirrhosis, 4 biliary cirrhosis, and 17 with no underlying cirrhosis. The significance of the association of cirrhosis with primary liver carcinoma lies in the increasing incidence of both viral and serum hepatitis, which may at a later date become converted into cirrhosis. Bloch and Chazan [3] suggest three theories as follows: that cirrhosis precedes and influences the development of carcinoma; that it is secondary to the neoplasm; that cirrhosis

and malignancy of the liver have the same provocative factors.

In children, there are too few examples in the liver of the combined lesions to permit analysis. Of 52 per cent of reported primary liver carcinoma in children under the age of two, cirrhosis was found in only two children.

In a survey of 18 cases of Lemmer,[4] cirrhosis of the liver was found in 55.5 per cent. Bloch and Chazan state that cirrhosis of the liver is present in 87 per cent of adults with primary carcinoma of the liver. Although in their survey of 90 collected cases in children from the European and American literature, only 2 patients were found to have cirrhosis. Macdonald found that in a series of 108 tumors, 82 or 76.9 per cent were associated with cirrhosis.

Pathology

Primary liver carcinoma is usually found as one of three types. Grossly by appearance they are classified as (1) massive, (2) nodular and (3) diffuse infiltrating.

1. In the massive type, one finds a single, large, irregular tumor mass involving one lobe, usually the right. There may be other smaller satellite nodules, but the lesion is limited to the one lobe.

2. The nodular type is characterized by multiple tumor masses varying in size and consistency.

3. The diffuse type is also frequently called the infiltrating, or carcinomatous cirrhosis. Grossly the liver is extremely scarred by cirrhotic bands enmeshing many tiny nodules. This is so much like the appearance of Laennec's cirrhosis, that unless a liver biopsy is taken, the diagnosis will be missed.

Microscopically, primary carcinoma of the liver may be divided into three major histologic classes: (1) hepato-cellular or malignant hepatoma of the liver cell type, (2) the bile duct cell type or malignant cholangioma, and (3) the cholangio-hepatoma, or mixed type.

1. The hepatomatous type[8, 9] is the commonest form of liver cancer. It arises from the parenchymatous liver cells and consists of polygonal or polyhedral shaped cells. This form is frequently associated with cirrhosis either as multiple nodules of varying sizes and shapes, or as a massive growth involving a large portion of the lobe. Except for a satellite dispersal around the individual large tumor mass, the rest of the liver is normal. The nuclei show much variation in size, shape and staining characteristics. These cells are capable of secreting bile, but whether it is chemically normal, has not yet been determined because of the difficulty of collecting it for analysis. A cirrhotic reaction is common. This type of liver cell carcinoma differs from the bile duct or cholangiomatous type by virtue of the septa of capillary stroma.

2. The cholangiomatous or bile duct carcinoma arises from the epithelium of the intrahepatic bile ducts. These cells are cuboid or cylindric, with small hyperchromic nuclei. The cell morphology is more constant. The tumor cells tend to form glands and ducts. The massive solitary form of tumor is not seen in this type. Here the growth is scattered throughout the liver.

3. The mixed or atypical group consists of cholangio-hepatomas, which is a combination of neoplastic proliferation of bile duct cells and liver parenchymal cells. Sections of this type show a greater preponderance of the bile duct cell type due to its more rapid growth propensity. In some series studied, this mixed group is considered the most common variety.

Hepatic Cirrhosis and Liver Cancer

Most investigators regard the frequent coincidence of cirrhosis with primary liver carcinoma as an important intermediate stage in the carcinogenic process. In Africa and Asia it is unusual not to find carcinoma without cirrhosis. Both Berman[10] and Macdonald[2] found a greater incidence of cirrhosis in the hepatocellular cancer. Ewing is quoted as reporting 85 per cent of liver cell cancer as against 50 per cent in bile duct cell cancer, with cirrhosis. Where hepatic cirrhosis is infrequent, there also primary liver cancer

is uncommon. Counseller and McIndoe [8] are quoted as stating that the authenticity of a diagnosis of primary carcinoma of the liver is questionable in the absence of cirrhosis.

The reparative processes which usually follow liver damage tend to overgrowth and actual hyperplasia. It has been theorized that these isolated nodules of hyperplasia may eventually undergo malignant change. Why some of these nodules remain benign and others malignant, is as yet unknown. The possibility of a derangement in the cellular enzymatic metabolism which affects cell division, due to hyperactive oxidative changes, seems very intriguing to contemplate.

Numerous factors are credited with causing cirrhosis that possess carcinogenic or co-carcinogenic capabilities. These are as follows: (1) intestinal parasites, (2) liver fluke, (3) schistosomiasis, (4) hydatid cyst, (5) syphilitic hepatitis, (6) infectious hepatitis, (7) hemochromatosis and siderosis, (8) alcohol, (9) spiced foods, (10) keloid diathesis especially in the Negroid races, and lastly (11) possible viral hepatitis.

Clinical Features

The clinical picture of primary carcinoma of the liver is variable.[15] The symptoms are more usually those of a rapidly deteriorating cirrhosis associated with cachexia, weakness, and weight loss. The amount of ascites present depends upon the rapidity of the malignant growth, i.e., the more rapid the neoplastic growth, the less ascites, because the life expectation is shorter. In the presence of cancer, there may be more pain discomfort than with cirrhosis alone.[11] Usually it is more a picture of gall bladder disease. The pain is in the right upper quadrant. It is dull, aching and constant and may or may not be associated with the ingestion of certain foods.

Weakness, weight loss, fatigue with varying degrees of icterus are present. Cachexia is rapid. Laboratory findings are of no help at all, other than directing the attention of the observer to a derangement in liver physiology.

Carcinoma of the liver may occur at any age.[3] It is most infrequent in childhood and most often between the fifth and seventh decades. Males are most affected, although Boyce and McFetridge [12] reported primary carcinoma in two Negresses in a New Orleans Charity Hospital survey.

Diagnosis

Diagnosis must be made positively by liver biopsy at celiotomy. This author is opposed to needle biopsy of the liver for diagnosis, not only because of the chance of missing the lesion, or from possible hemorrhage, but because a more accurate appraisal of the situation can be made by direct inspection.

Treatment and Prognosis

No matter how much the various reported series may differ as to symptoms and signs of the disease, all are agreed upon one point, namely, the rapidity with which they are fatally terminated once the diagnosis is made.

So far as treatment is concerned, when the primary liver carcinoma is associated with cirrhosis, surgery is futile. Resection of a lobe or part of a lobe for the solitary adenomatous lesion has been done by Pack and others. This is the only type that offers any hope for survival. Wilson [13] noted that the first successful resection of a portion of the liver, done by an American, was Keen in 1897. This he did by exteriorizing the tumor of the liver and with hat pins and elastic bands, caused it to slough out. Pack has been most successful in his results, by lobar hepatectomy, but these were on the isolated pseudo-encapsulated types of massive tumor.

The pathologic features of primary carcinoma of the liver render surgical treatment nearly futile. Hepatic replacement by tumor with physiologic insufficiency renders the majority of these patients poor surgical risks. Metastatic lesions are present in over one-half of the cases at post mortem and gross venous invasion in at least one-sixth of the patients.

Case Report

F.O.'F., white male, age 72, was seen on October 28, 1959, because of pains in the right upper quadrant which had become constant, but were worse on deep breathing. The pains were sharp and knife-like especially if he moved or coughed. The onset was dated as one week prior. His appetite, which had always been good, had begun to fail. There was no nausea or vomiting. The bowel movements were regular but he had never noted the color of the stools. The pain did not seem to be related to his food. He had no fever, although he stated that he thought he had fever. Neither he nor his wife had noted any change in the color of his skin or eyes.

There had never been any previous history of a similar attack of pain, nor did he give a history of jaundice. He had been a rather moderate drinker over the years.

Upon examination, the patient was found to have lost a little weight. His temperature, pulse, and respirations were normal but it was noted that breathing was painful and he kept his right hand over the gall bladder region as if to splint it. His weight was 178½ and his B. P. 160/80. He complained of severe pain in the right upper quadrant when he coughed or took a deep breath or even to move about. His face was plethoric with a yellowish tinge and a circumoral pallor. Heart sounds were normal and regular. Lungs were free of pathology. The abdomen was not distended, nor were there any enlarged veins present. The upper abdomen was held rigidly and muscle spasm was obvious in the right upper quadrant. The abdomen was tympanitic. The liver and gall bladder were not palpable. There were no enlarged lymph nodes in the neck, axillae, or groin. The spleen was not palpable.

The laboratory findings were as follows:

Urine—Dark yellow, acid, 1008, negative for sugar and albumen, bile 4+, urobilin 4+, occasional pus cell on microscope.

Blood—B.U.N. 9.6 mgm %. Fasting blood sugar 134 mgm %. WBC 17,000; P-56; L29; M14; E1. Negative for malaria. Hbg. 15.75 gm or 101%. Hct. 51%. Sedimentation rate 13 mm/1 Hr. Serum was heavily bile tinged. Negative Wassermann and VDRL.

Prothrombin time: 14 sec., 100% of normal. Clotting time 5¼ min.

Bilirubin: Direct 1.88 mgm%; total 4.30 mgm%.

Stool, negative for bile.

Liver function tests: Thymol 2.3 units. Alkaline phosphatase, 4.56 units. Transaminase SGO-T 50 units per ml. SEP-T 48 units per ml.

X-rays: Gall bladder: Attempted gall bladder visualization failed to show a gall bladder shadow. No stones were identified.

Short G. I. Series: No evidence of any ulcer or other pathology of the esophagus, stomach or duodenal cap with the exception of hyperplastic rugae in the pyloric antrum and the suggestion of some prolapse of the gastric mucosa into the duodenal cap. The duodenal loop was somewhat rounder and the upper part of the second portion of the duodenum did not fill completely. The findings were not sufficient to consider a tumor of the head or the pancreas.

Chest—E.P.A. of the chest shows the lungs to be clear. Cardiac, aortic, and hilar shadows are within normal limtis of size. Slight calcification of the wall of the aortic knob is apparent.

Electrocardiogram—Normal.

Preoperative diagnosis — Acute exacerbation of chronic cholecystitis with common duct stone, or possible carcinoma of the head of the pancreas.

The abdomen was opened through a right upper rectus incision. The liver was enlarged, hard, and highly lobulated in both lobes. The gall bladder was distended. After aspiration, no stones were found. The common duct was slightly distended. No stones were palpated. The stomach and duodenum were normal. The stomach was elevated and the lesser omental space opened and the pancreas explored. The pancreas was generally enlarged. The head felt larger and harder than normal. No areas of necrosis were found. No enlarged lymph nodes were seen or palpated. Because of the jaundice and the positive findings of obstruction, and the suggestive evidence of pancreatic carcinoma, a cholecystojejunostomy was performed. A large wedge-shaped section of the liver was then taken for biopsy.

Pathologic Report: Hepatic sections showed distortion of the lobular architecture with irregular bands of lymphocytic infiltrated fibrous tissue extending throughout. There were many vacuolated hepatic cells, and the nuclei showed regenerative changes. There were multicentric foci of anaplastic tumor cells with deeply basophilic cytoplasm. The nuclei varied markedly in size and contained prominent nucleoli. There were bizarre multipolar mitosis.

Diagnosis—Liver cell carcinoma, multicentric. Lobular cirrhosis, Laennec.

The postoperative course was rapidly down hill. Pain persisted. Jaudice became more marked. Anorexia, vomiting and weakness increased. The patient expired five weeks after his first examination.

Postmortem — The findings in the abdomen were essentially the same as at surgery. No obstruction was found in the common duct to account for the positive laboratory tests indicating extrinsic hepatic obstruction. No carcinoma was found in the pancreas. The entire liver

was invaded by the diffuse anaplastic growth. No metastases were found elsewhere.

Summary and Conclusion

A case of primary diffuse carcinoma of the liver associated with Laennec's cirrhosis has been reported. Primary carcinoma of the liver is rare in the U.S. There are three types found: massive, nodular, or diffuse. These are again classified histologically as liver cells or hepatic, bile duct cell or cholangiomatous, and the atypical or mixed cell type. The high incidence of association with cirrhosis may be more than coincidence. Derangement in the enzymatic metabolism provoked by the cirrhosis during the regeneration of the hepatic tissue, is an interesting speculation. The increasing frequency of cirrhosis following both serum and viral hepatitis, may result in a greater incidence of primary carcinoma of the liver. Diagnosis is usually difficult and seldom made antemortem. Only in the solitary unilobular lesion, is surgical intervention possible. Life expectancy is otherwise usually very short.

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Sea-Weed As An "ANTI-FAT"

The use of the variety of sea-weed botanically known as **Fucus vesiculosus** for reducing obesity has obtained recognition in professional circles abroad. Dr. Fairbanks writes to the **British Medical Journal** as follows: "More than fifteen years ago, I gave some of the extract in pill (four grains, three times a day) to a very corpulent lady, who in three months lost three stones in weight without any change of diet. Since then I have frequently given it for reducing weight depending on the accumulation of adipose tissue, and have never found it to fail. The solid extract can be easily made into four grain pills, which must, however, be kept in a stoppered bottle as they readily absorb moisture from the air. I may say that a patient who has been lately taking it as an anti-fat and who has always suffered very much from rheumatic pains about the body, has been entirely free from such trouble while she has been taking the extract, a fact which she quite independently noted.—Boston Journal of Chemistry, October.

New Orleans M. & S. J. 7:708 (January) 1880.

Popular Misconceptions Concerning Nasal Function*

• Postnasal drip and nasal congestion are the two chief complaints magnified by some patients into an importance out of proportion to any existing pathology.

R. S. HENDRICK, M.D.
Shreveport

OFTEN one of the most baffling and trying problems with which a physician can be faced is that of the patient coming to the office with a complaint of nasal obstruction, excessive nasal secretions, headache which occurs in the morning, postnasal drip, or frequent colds and the like. In the group of patients under discussion today, the most dilligent examination discloses no evidence of nasal deformity or of suppurative disease. The fact that there is an important subjective element involved in most of these complaints adds greatly to the difficulty in diagnosis and treatment.[1]

Various authorities have stated that probably 75 per cent of all nasal complaints coming to a doctor's attention are functional rather than organic in nature.[2] In the treatment of these patients a brief consideration of the physiology of the nose and the probable factors producing alteration in it would make the cause of the symptoms and the treatment of these symptoms obvious.

Many of these unfortunate individuals have been subjected to destructive nasal and pharyngeal surgery which has only added new symptoms to the old, leaving them in such a state that it is impossible to afford them relief.

Before we go further let's take a brief look at the internal anatomy and physiology of the nose.

Anatomy

The septum separates the nose into two nasal chambers and forms the medial wall of each. The skeletal portion of the septum is composed of the quadrilateral cartilage anteriorly, the perpendicular plate of the ethmoid above, the vomer and the rostrum of the sphenoid posteriorly, and a ridge below made up of the crest of the maxillae and the crest of the palatines. On the lateral wall there are two large turbinates (the middle and inferior turbinates) and usually one and sometimes two rudimentary ones above (the superior and supreme turbinates). The middle, superior, and supreme turbinates are part of the ethmoid labyrinth. The inferior turbinate is a separate bone and is attached to the ethmoid and the maxilla. The middle and inferior turbinates are long fleshy bodies hanging downward from the lateral wall and extending horizonally almost the full length of the wall. They are supplied with swell bodies or cavernous venous spaces which serve to adjust their size. The entire mucous membrane of the nose and sinuses is a ciliated pseudo-stratified columnar epithelium.

Physiology

The principal function of the nose, other than olfaction, is to act as an air conditioner.[1] The inspired air during the brief passage through the internal nose is cleaned, moistened, and adjusted as to temperature. The journey of four inches from the nares to the choanae takes not over one-fourth of a second yet the relative humidity when it reaches the pharynx is 75 per cent or more and the temperature is about 97 degrees no matter what the temperature was a quarter of a second previously just off the tip of the nose. All dust, bacteria, and particulate matter

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have been removed and the air is ready to be received into the lungs.[3]

The turbinates and their integument are the principal structures involved in this process and we may state that nasal physiology depends upon the integrity of the turbinates. The anterior end of the inferior turbinate directs the inspired air upward principally past the middle meatus where the air is split into thin sheets and then passes backward into the pharynx.

The glands of the nasal mucosa form a continuous mucus blanket over the surface of the functioning part of the nasal epithelium. This blanket supplies moisture to the inspired air and engulfs foreign particles in its tenacious substance. Both serous and mucus cells are present in the glands and the relative amount of water in the secretion and its viscosity are determined by the relative amount of water and mucus produced by these cells. It follows that there is a delicately adjusted secretory control which responds to the demands of the environment. The amount of mucus produced during a twenty-four hour period varies from person to person but it averages between one and a half and two quarts. The nasal mucus membranes are most active at puberty and after the late twenties their activity diminishes and they gradually atrophy.

The pH of the mucus blanket is about 7, or in other words, neutral. This is important because if the pH varies much the cilia do not function well. Neither does lysozyme, an antiseptic enzyme which not only kills bacteria but causes them to dissolve.

The cilia are continuous over the surface of the functioning portion of the nasal mucous membrane. There are 25 to 30 cilia on each cell.[3] The cilia stroke at between 200 and 250 cycles per minute.[1] The strokes of the individual cilia are not just a waving back and forth. Each stroke has a powerful rapid phase in the direction of flow. This is followed by a slower movement of recovery in which the cilium bends. The waves of ciliary activity are directed posteriorly in the nose and in the sinuses the direction of flow is circular toward the ostia.

The two nasal chambers alternate in their activity, one side becoming engorged and blocking the passage of air, while the other side is secreting, opening, and allowing the passage of air. This alternate opening and closing varies from person to person, the alternation varying between half an hour and two hours.[4]

According to variations in the temperature and relative humidity, the cavernous tissue on the medial surfaces of the turbinates becomes more or less congested in order to vary the cubic capacity of the nasal chambers and by controlling the volume of inspired air to prepare the chambers for environmental changes. Variations in temperature have a more marked effect on the cavernous tissue of the turbinates. Variations in humidity have a more marked effect on the serous and mucus cells of the glands. Extremely dry air places a greater demand upon the serous cells while a humid climate places the greater burden upon the mucus producing cells. The content of mucin in the blanket remains close to 3 per cent. If it becomes more dilute or concentrated, the blanket will have too much or too little viscosity to be handled by the cilia of the underlying mucous membrane.

Physiologic Complaints

The most common complaints offered by patients concerning the nose are based on either misinterpreting normal physiologic action as disease or misinterpreting the effects of senile changes as disease.

Many patients complain of the alternating obstruction produced by the normally functioning nasal chambers. In the past removal of the turbinates for this complaint has led to much real secondary atrophic changes in the nasopharynx, oropharynx, and larynx. The passage of time will usually overcorrect a hyperactive nasal mucosa so usually an explanation of the physiology will relieve the patient's apprehension.

Another complaint is the closing of the dependent side of the nose during sleep.

This is caused by the action of gravity on the tissue fluids in producing a congestion of the mucosa of this side of the nose. These complaints can be accentuated if a septal deflection tends to occlude the side which would normally be open. Usually in these cases an extra pillow under the head plus an explanation of the physiology involved will relieve their anxiety.

Probably the commonest complaint is postnasal drip. It has been passed down from generation to generation that there should be absolutely no drainage from the nose into the back of the throat. Prior to the turn of the century such drainage was termed "catarrh." At the present time the terms "postnasal drip" or "sinus trouble" cover such drainage quite adequately. At any rate, if such drainage is present it is thought to be pathologic and to swallow it would "poison the system."

To certain hypersensitive individuals their postnasal drip is an extremely serious symptom. They seem to have their inward eye constantly focused on their nose and throat. They are convinced that they suffer from a debilitating and as yet incurable disease. Their morning ritual of clearing, harking, and spitting is deadly serious. They will often state that despite all their efforts they always swallow some of the secretions. This nauseates them and they vomit. Many of these people actually end up vomiting every morning. During the day they continue periodically clearing the nasopharynx and say that the mucus is so thick that it won't come down. Examination of the nasopharynx reveals no trace of excess secretions. Here nature plays a mean trick on them. The more they clear the more it feels as if it needs to be cleared. These tense individuals often have globus hystericus; thus they also complain of thick mucus low in the throat which they can't clear up or swallow down.

These are the ones with whom we frequently have to spend the most time. If we are hasty and explain away their symptoms as "due to nerves" and give them another bottle of nosedrops to add to their already bulging medicine cabinet we have done them a serious injustice. We must try patiently to explain normal nasal function to them. Emphasize that the feelings are quite real, not imagined, and that the clearing habits and associated anxiety magnify them. A few are almost beyond contact with reality and they leave your office convinced that you were just trying to explain away your inability to find the "real trouble." Though many seem skeptical at first, it is gratifying to see the large number who do accept the explanation of their symptoms, break the clearing habits, and are completely relieved. These are numbered among your most grateful patients.

Many persons mention their postnasal drip only in a review of systems and in a casual manner with a certain element of pride; pride in the fact that they are able to lead normal lives with the same symptoms that others find almost incapacitating. This tends to make one feel that he is made of sterner stuff. Often they actually enjoy their clearing, harking, and spitting ritual. It is part of the routine of getting down to the office. To deprive such people of this pleasure might be cruel. Injured pride heals slowly if ever.

A large number of persons are true nasal neurotics.[5] The patient presenting this syndrome insists that he has nasal obstruction despite all objective evidence that the nasal passages are normal and adequate. He will sniff with great force and insist that the resulting noise is due to obstruction. He doesn't realize that the forceful inspiration acts reflexly to close the nostrils and make the inspiration audible. With each successive forceful sniff, the blockage which was originally not present, develops and increases. The membranes react as though they must warm, moisten, and filter this more rapidly moving air. He now demands more airway and often undergoes destructive surgery or begins to depend on nosedrops. His standard of normalcy quickly changes. He accepts the cool feeling of the constricted membranes as normal. The original benzedrine inhaler helped develop an entire generation of nasal neurotics many of whom were phy-

sicians given free samples. The open nose and the mild euphoria were irresistible. Here again the treatment lies in re-educating the patient. The anti-histamines are of benefit plus the use of progressively milder and milder constrictors until they can eventually be discontinued.

In addition, there are milder manifestations of emotional effects upon the nose. For instance, we are all familiar with the nasal obstruction and watery discharge associated with crying. In a number of patients their nasal symptoms vary directly with their marital ups and downs. Another example is the so called "diplomatic cold" which appears when necessary to its owner and vanishes just as readily when it is no longer needed. The pitcher of water is at the speaker's table not because he is thirsty but because he is dry both in the mouth and nose. All too frequently little anxieties, many of which are almost unrecognized, express themselves as a dryness of the mouth and nose.[2]

Many nasal complaints are referable to age. I mentioned earlier the marked increase in the cavernous tissue of the turbinates at puberty. Therefore, between the ages of about fourteen and thirty many persons complain of stuffy nose and alternating obstruction. In former years such persons underwent turbinectomy which produced temporary relief at the expense of creating lifelong pharyngeal irritation and a crusty nose. After the age of twenty-five to thirty the nasal mucus membranes and particularly the turbinates begin to atrophy. As a result the nose becomes less and less efficient as an air conditioner. The inspired air rushes through the enlarged nasal chambers without being sufficiently cleansed or humidified and on striking the posterior pharyngeal wall sets up a region of inflammation by breaking the mucus blanket. This explains the frequent hacking cough of elderly individuals. Dryness of the mucosa produces a subjective sensation of nasal obstruction. Stimulation of the secretory powers of the nasal mucosa will provide a certain measure of relief. The expectorants are of some value but the iodides seem to be of the greatest value. A properly used oil spray may produce a coating of oil over the surfaces to replace the deficient or absent mucus blanket. Oil has insufficient viscosity to be moved by ciliary action so it may afford protection for a considerable time. The oil spray must not be inhaled because of the possibility of lipoid pneumonia.

Occupations which produce constant irritation of the nasal mucosa or occupations which by rapid alterations of the environment demand rapid functional changes in the nasal mucosa are likely to result in hyperactivity of the nasal mucosa. Thus persons who work around irritating fumes or others whose work exposes them to sudden marked changes of temperature may complain of stuffy, runny nose and postnasal drip. The treatment is either to change the occupation or else endure the nasal symptoms.

Other symptoms which I will mention only in passing are the marked nasal congestion just before and during menstruation, and the nasal congestion of pregnancy. The increased activity of the nasal mucosa during sexual excitement is marked and is sometimes called "honeymoon coryza." Myxedema and hypothyroidism without myxedema produce nasal congestion.

Disorders of the autonomic nervous system also influence nasal function. Vasomotor rhinitis or the physical allergies cover too broad a field to be discussed at this time but I will mention that the nasal congestion, sneezing, and watery discharge are brought about by the action of some physical agent upon the skin such as a sudden change in temperature of the skin or the effect of sunlight on the skin. The anti-histamines are of help here but of equal importance is explaining the condition to the patient.

Lastly, I will mention the alteration in nasal function caused by the misuse of drugs. The standard irritant used by our forebears was a strong salt solution snuffed through the nose, often mixed with bicarbonate of soda because of its ability to "dissolve mucus." In recent years this pernicious solution has lost favor to

the better advertised and even more irritating new products but certain of our senior citizens still swear by it. It is very hard to watch your favorite "Western" these days on television without being deluged by the advertising of various nasal sprays and nosedrops. They brag about their antibiotic properties, about their substances which dissolve mucus, and about their substances which relieve sinus congestion. Each product vies with the others in proclaiming the "number of ways" in which their product relieves symptoms. The number of ways increases each week and is beginning to sound like the national debt. The patients whom we have been talking about are sitting ducks for such advertising.

Sympathomimetic drugs such as epinepherine, ephederine, benzedrine, and the others, because of their frequency of use, are responsible for most of the nasal congestion due to the misuse of drugs. The primary action of constriction is followed by a refractory secondary relaxation. As a result, a condition is produced in which more and more of the drug has less and less effect, while the congestion of the nasal mucosa is more marked and ensues more and more rapidly. Chronic congestion of the mucosa is thus produced and it is particularly marked in individuals who have been addicted to the use of these substances for a number of months. Here again, the treatment lies in re-educating the patient plus the use of progressively milder constrictors until they can eventually be discontinued.

Summary

It has been estimated that probably 75 per cent of all nasal complaints coming to a doctor's attention are functional rather than organic in nature. Most of these complaints are based on either misinterpreting normal physiologic action as disease, or misinterpreting the effects of senile changes as disease. In the treatment of these patients a brief consideration of the physiology of the nose and the probable factors producing alteration in it would make the cause of the symptoms and the treatment of these symptoms obvious.

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Discussion

Dr. Jack R. Anderson (New Orleans): Dr. Hendrick's paper contains an uncommon amount of common sense about nasal complaints. It should be read and its contents noted and applied by all who treat such cases. A few of the points Dr. Hendrick makes are worthy of emphasis and elaboration.

When a patient complains that his nose is blocked, it should not be invariably assumed that edema of the intranasal tissues is the cause. In many instances, the word "stuffy" would more accurately describe the condition. Apparently, to experience a sense of normal breathing, (1) a certain amount of negative pressure must be developed on inspiration, and, (2) a definite degree of moistening of the inspired air must occur. Extremes at either end of the scale result in a sensation of "stuffiness" which patients loosely describe as "blockage". Examples of this are common clinically; thus, patients with markedly deviated nasal septa will often complain of blockage on the side which is most patent, and those with early (and advanced, too) atrophic rhinitis without crusting will report that they suffer with nasal blockage even though there is actually an increase in the volume of the nasal passages. It is important to make this clinical distinction for prescribing the usual vasoconstrictor medications for such patients is definitely contraindicated.

Aside from bacterial allergy and exposure to low humidity, the most common causes of nasal stuffiness, in my experience, have been reactions to fear and anxiety, excessive smoking, excessive coffee drinking, and endocrine hypofunction due to advancing years. Fear and anxiety cause sympathetic stimulation. Tobacco smoke, in addition to being a local irritant, acts systemically and also produces vasoconstriction. Coffee, as a result of its caffeine content, also causes vasconstriction, and, because it is a potent diuretic, also causes dehydration and thickening of the nasal mucus. Anything that causes prolonged vasoconstriction in the nasal mucous membrane will cause a decrease in the amount and an increase in the viscosity of the mucus produced. Thus, the nasal passages will be open

widely, and yet the patient will say it is blocked. Usually, these patients will complain of a seeming paradox; they report a great deal of dryness of the nose and throat and yet complain bitterly of the thickness of the mucus and the difficulty they experience in trying to rid themselves of it.

Something should be said about postnasal discharge for so many people think it is an indication of something which they vaguely describe as "sinus." One type of postnasal discharge is normal—we all have mucus, produced in the nose, which passes down the lateral walls of the nasopharynx to the hypopharynx to be swallowed. The postnasal discharge resulting from purulent sinusitis is usually foul-smelling, has a sweetish-sickening taste, and proves irritating to the pharyngeal tissues and so causes pain. Individuals complain of nonpurulent postnasal discharge either (1) when the amount of mucus is profuse, e.g., as in allergic rhinitis, or (2) when the mucus is thick and does not move normally across the membranes, but, rather, rolls over in masses. In the latter instance, the patient becomes conscious of the thickened mucus and begins to make strenuous efforts to remove it. Sometimes, as Dr. Hendrick mentioned, an actual fixation develops and efforts to obtain relief become persistent, and often violent, and actually lead to nausea and vomiting.

A more rational approach to the treatment of nasal complaints would be obtained if physicians would heed Dr. Hendrick's admonitions and would, in addition, make wider use of the microscopic study of nasal secretions.

I have enjoyed Dr. Hendrick's presentation and wish to thank and congratulate him for bringing these practical facts to our attention.

Dr. E. W. Raggio (Lake Charles): I would like to congratulate Dr. Hendricks on his excellent presentation and Dr. Anderson on the excellent discussion. These gentlemen leave me without very much to add.

However, I would like to place additional emphasis on the point that "postnasal drip" is a very common complaint and can be quite troublesome to doctor and patient alike.

I find it more difficult to make a diagnosis of a functional or psychosomatic condition than one having an organic or infectious basis and for that reason I would like to point out two things that the patient might have, but could be labeled psychosomatic unless we have them in mind.

As we all know the nasal membranes are related to general bodily functions and are therefore affected by such conditions as hormonal imbalance and allergic states.

Allergy, especially the perennial nasal allergy, may cause the complaint of stuffy nose and postnasal drip. In diagnosing this condition a family history of allergy is helpful and finding preponderance of eosinophiles in the nasal secretion with the microscope and stained smear will clinch the diagnosis of allergic rhinitis.

The treatment for this is, of course, based on skin testing and food testing to find the offending allergen, which is in most cases house dust and molds. Treatment with the specific allergen will give excellent relief.

Hypometabolism is also responsible in a few instances. This can be diagnosed with basal metabolism, protein bound iodine and blood cholesterol tests. Better results are obtained when the B.M.R. is done under sedation i.e., Seconal gr. 3 the night before and Seconal gr. 1½ one hour before the test. If the sedated B.M.R. is minus 15 or the P.B.I. is low or both and the blood cholestrol normal or high, treatment with tyroid extract or Cytomel is indicated and generally relieves the nasal symptoms.

Proceedings of the Attakapas Medical Association
Second Meeting, New Iberia, Nov. 27, 1879

"Resolved that the second article of the Constitution be read. Motion adopted.

"The article was read as follows:

"The objects of this association shall be the pursuit and cultivation of the practice of medicine, and the sciences on which the same is based, together with the defence of rights and elevation of the dignity of the medical profession; also the protection of the professional interests of its members, and the cultivation of harmony and fraternal feeling among the members of the profession within its boundaries.

"On motion of Dr. M. W. Richardson, duly made and seconded, it was

"Resolved that a committee be appointed whose duty it shall be to examine the statutes of the State, and if found necessary, to draw up a petition to the Legislature, at its next meeting, requesting that a law be passed for the protection of the qualified and regular practice of medicine, against quackery, and the unqualified practice of medicine, midwifery and surgery within the State."

New Orleans M. & S. J. 7:740 (January) 1880.

Organized Medicine and the Crisis in Community Health Programs*

• The author believes that the medical profession is losing its position of leadership in community life and presents reasons for the changing position of organized medicine.

BEN FREEDMAN, M.D.
New Orleans

Unity of Medicine and Public Health

PUBLIC health and medicine have grown and developed from the same roots. Their subject is human beings in social settings. Their aims are to prevent and control the occurrence of disease and disability, to ameliorate the sufferings of the sick and prevent such conditions from shortening life, to rehabilitate the disabled as much as possible to social usefulness and self-reliance, and to promote conditions for optimum physical and mental health for individuals and communities. This wisdom of health has evolved through the centuries by a process of selective incorporation of the knowledge of nature and society into a humanitarian framework of application. Public health and medicine, therefore, are rooted in the natural sciences, nourished in the social sciences, and nurtured in a philosophy of ethics, steeped in a creed of humanism.

This statement is neither new nor radical. It has been professed over and over again in various ways by medical and public health societies since their inceptions, and by the individual leaders in medicine and public health at various times through the current of medical and public health history. The medical profession, therefore, has played a leading role of responsibility in initiating and stimulating the growth and development of community health programs from the beginning.

Before the onset of specialization, medicine and public health were an ideological unity. The dedicated physician was a community leader—the central figure and confidant around whom the people rallied in times of stress, and upon whom they depended for individual and community guidance and succor. Nothing could have been more natural than such a relationship between the physician and his people.

Some physicians today still play an inspiring role in community health affairs, but the profession's relationship to the people has suffered significantly. No longer does this relationship carry with it the sparkle and reverence of the past, nor the strength, nor the vigor, nor the vibrancy. A new leadership has insinuated itself into the realm where the physician once prevailed, and it is challenging his position. This leadership has arisen from various non-medical fields and from the ranks. It is stepping into the vanguard in community life where physicians have lost their vigilance and have failed to express their sympathy to the health needs of the community and to keep abreast in the struggle to help the community solve its health problems. This does not mean that the traditional free-giving of services by physicians has diminished. Not at all. Physicians are still the most generous givers of services to the needy. It is in the field of comprehensive planning to solve community health problems that the organized medical body has failed.

Let us trace the course of these developments. Before the period of mass production and public education, when commerce and urbanization were in the earlier stages of growth and development, the destructive communicable diseases were the greatest problem of communities and phy-

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, in Baton Rouge, May 4, 1960.

sicians. The care of the individual was a perplexing problem, indeed. Due to the undeveloped state of medical knowledge, the results of the physicians' ministrations were mediocre to say the least. Death rates were high. Infants had a problematic chance of survival. The average length of life from infancy for the common man was scarcely more than a score of years. The opportunities for surviving were matters of medical responsibility. The leaders in medicine pondered, philosophized, discussed, argued, fought, and wrote on these problems. They found quicker solutions in empirical preventive techniques than in therapeutics, and acted rapidly in applying these to their communities. Nevertheless, their theories, hypotheses, and speculations set the stage for modern science, and created the instruments of community health practices which are the basis of modern public health organization and administration. In fact, the essentials of good public health practices such as quarantine, isolation, vaccination, nutrition, excreta control, stream pollution, and housing began long before the science of bacteriology was founded.

The methods used by communities in controlling communicable diseases were simple techniques whose application generally required a minimum of disturbance of those social and cultured habits and interrelationship which might violate traditionally established sensibilities and evoke deep-seated, antagonistic, emotional eruptions from the community and medical profession. At this point, one may cite the example of small-pox vaccination, and the antagonisms which its application called forth when introduced to the western world. But even here, the acceptance of this simpler technique spread rather rapidly. During that period, the medical profession concerned itself not only with the individual problems of health but also with every aspect of public health that was recognized as a public matter.

A New Era — A New Problem

Now that the mortal epidemic diseases of yesteryear have been largely controlled or prevented, the main causes of death and disability are presenting a new spectrum. A few of the chronic communicable diseases such as tuberculosis, syphilis, and rheumatic fever still linger dangerously in our midst, although the main killers of our day are neither acute nor communicable in nature. In 1958, heart disease, cancer, vascular lesions, and accidents accounted for 71 per cent of all deaths in the United States. But why have such diseases as syphilis, tuberculosis and rheumatic fever not been more satisfactorily controlled, and why are the above mentioned noncommunicable conditions coming so strongly to the fore? The main reason is that the problems involved are socially more complicated. Such simple technical procedures as quarantine, isolation, immunization, and water or excreta control are no longer valid to cope with these problems. Control is bound up with measures of complex social involvement such as are associated with housing, nutrition, interpersonal and intergroup relations, medical care, and income. The complex social problems involved in controlling these three diseases are compounded several-fold in dealing with the prime killers and disablers of today, particularly the behavioral aberrations. The manipulation of these socio-cultural factors may, and do in many instances, give rise to a disturbance of social interrelations and cultural practices which usually are bound up with antagonistic emotional responses. For medical practitioners, the problem involved here relates mainly to disturbances of the traditional interrelations involved in giving medical care. *Organized medicine's reaction to solving this problem decidedly affected its leadership in community health programs and its relation to public health in general.*

The Nature of Change in Society and Medicine

Let us review how it came about that, under the impact of quickening social changes initiated by modern methods of mass production and the process of urbanization, the medical profession is losing

its position of leadership in community life. In scanning the history of the transitional period that led us into the present era, the reason for declining leadership of organized medicine becomes quite clear. Organized medicine has not changed the social outlook of its interrelations with society, even though society itself has changed profoundly and the medical profession has markedly changed the technological aspects of its practice. This needs to be understood thoroughly by the profession and therefore needs to be analyzed in some detail. In order to do this, I would like to posit three theses which appear to be inevitable in the process of modern social development:

1. Science will continue to give us an increasing flow of knowledge that will lend itself to mass application for control of disease and for promotion of better health.

2. Communities will increasingly seek to apply such knowledge to protect themselves against the ever-pervading fear of sickness, and to realize the age-old dream for universal good health.

3. The more that community health programs are put into operation, the more will people seek medical care from the medical practitioner, and the more stable will become the economic status of the profession as a whole.

A fourth thesis will be posited later which will clarify the position that organized medicine must take as a result of what is happening.

The above three theses have not been well understood by organized medicine or the profession in general. This is why a crisis in medical leadership has developed both in official public health and in other community health programs.

Fear and Its Consequences

Why has the medical profession not understood these basic theses? The only reasonable and historical answer is: because of *Fear*. This fear has manifested itself in three basic ways:

1. The physician fears a change in the *relations* between himself and the patient, between government and the medical profession, and between government and patient. He has a vivid picture of the descriptions he has read and heard of the happenings in Europe in the field of community health programs. He fears similar developments at home. He fears that the confidential and professionally intimate *relationship* between himself and his patient, which is so important in good medical care, will be destroyed. He also fears that community health programs have a tendency to attract government control and to stimulate government to organize more widely distributed community health programs. This, he fears, will engender control over him and interfere with his creative, experimental, and observational freedom, besides generating economic controls on income. He further fears that the government may exert an inordinate control over the patient which may upset the traditional patient-physician relationship.

2. The physician fears changes in the age-old *institution* of private practice of medicine — a heritage of practicing his profession in an atmosphere of almost complete freedom from social controls. He has reacted to such controls even when he himself deemed them necessary. For example, he rebelled against medical licensing boards, although he helped to create them. He rebelled against the reporting of births and deaths and certain diseases, although he laid the basis for these controls. He is now rebelling against almost any form of organizational change in the application of medical knowledge to community health which he fears may possibly bear the seeds of modifying his status as a private practitioner, although the knowledge which he has created is helping to facilitate the emergence of such changes.

3. The physician fears change or interference with the *customs* and *traditions* (the *mores*) of his profession such as remaining free from the responsibility of accounting to his peers or to the public for continuing his educational growth, or for the way he manages the diagnosis and treatment of his patients. He fears inter-

ference with his right to sell his service without social restriction and to freely donate his services for the welfare of the community as he sees fit.

Organized medicine's inability to deal rationally with the three theses which are inevitable in the process of modern social development has served as an incubator for breeding these fears. This set of circumstances has led to the crisis in medical leadership where community health programs are concerned, and particularly where these programs deal with medical care.

How has this crisis manifested itself?

1. Organized medicine has developed an almost obsessed suspicion of community organized health programs, particularly when administered by government. Because public health agencies are the traditional operators of community organized health programs, public health physicians, who are agents of the government, have received the brunt of the private practitioners suspicions and have been tolerated with reluctance in organized medicine's circles.

2. This tendency to isolate public health physicians (who certainly have also contributed to their own isolation) has to a large extent, sterilized their imagination, frozen their aggressive leadership, and separated them from joining their medical confreres in the struggle to find solutions to the perplexing socio-medical problems.

3. Like public health physicians, the salaried physicians in private and voluntary organizations have suffered similar discrimination because being salaried has given them the same status as public health physicians in the eyes of organized medicine.

4. Organized medical groups are very often found aligned against community health programs, without themselves offering suitable solutions for the health problems involved.

5. Despite the deterrent effect on the public health physician's creative ability in developing and operating community health programs due to his medical brethren's opposition, all types of community health programs have been emerging like mushrooms everywhere, including health insurance and medical care programs.

6. A great many community health programs and most of the medical care programs have been organized and are being administered by nonmedical agencies. These agencies make an ostentatious display of enlisting the advice of the medical profession and to hire physicians to do the medical work, but the pattern in planning and administering these programs is ultimately the reflection of the attitudes, ideas, and wishes of the nonmedical administrators, and these are too often in conflict with the requirements of good medical and public health care and with the sensibilities of the physicians.

Medical Leadership and the Fragmentation of Health Services

Thus, by default of the medical profession, community health programs are coming into existence and are being operated without medical leadership and in opposition to the values and ideals as well as the prejudices of private practitioners. Our quarrels, however, cannot be with these nonmedical agencies. They recognized certain health needs of the community, and met those needs in the way they thought best, while organized medicine neither admitted that it recognized the needs nor presented workable counterproposals to meet these needs. When the community becomes convinced that it has a health problem, and the medical profession refuses to take the lead in solving it, can we blame nonmedical agencies for coming to grips with the problem?

In the wake of organized medicine's surrender of leadership, a serious fragmentation of health programs has resulted. Preventive medical programs have become separated from therapeutic programs, the medical aspects have been separated from those of environmental hygiene, and the rehabilitation programs have been isolated and insulated in a serene sphere by themselves. Thus, a comprehensive approach to family health problems and to those of the individual

has become almost impossible by the fragmentation of health services.

Let us see how this fragmentation has manifested itself in Louisiana. With few exceptions such as institutional services, public health programs of a medical nature had traditionally been operated by the State Board of Health up to the end of World War II. Since then, important new programs have been established, many of which are being operated by agencies with nonmedical direction and nonmedical orientation. At present, the sight conservation program, the program for partially sighted pre-school children, the greatly expanded medical care program for the needy, and the day care nursery program are being operated by the Department of Public Welfare; the evaluation center program, the mental health program, the nursing home program, the dental trailer program, and the hospital and health center construction program are under the direction of the Department of Hospitals; the medical aspects of the vocational rehabilitation program and of the program for exceptional children are under the administration of the Department of Education. Few persons who know the details of the operation of our state health programs have failed to realize how the separation of the planning and management of these health programs have reduced their efficiency and effectiveness and have increased their administrative costs. For the medical profession, the control of medical programs by nonmedical direction has still another significance — the alienation of medical management from the physician. The legend of the physicians' ineptitude as administrators has been spread far and wide by nonmedical groups and has been one of their important rationalizations why physicians should not administer community health programs. Organized medicine's apparent indifference to the problem of who administers medical programs has gone a long way to support the legend of the physicians' ineptitude in these matters.

Fear and the Question of Validity

Let us examine to what extent the fears of organized medicine are valid. Certainly, we, as a profession, have shown little fear of the development of new medical knowledge during the last half century, nor fear of the technical changes in use of drugs and diagnostic methods. Thus, although we have shown no fear of change in medical knowledge and technology, our fears have, however, been directed toward social and cultural changes. Is it reasonable and is it normal to harbor such fears? Fear of social and cultural changes is normal for individuals and groups just as acceptability of such changes is normal. But a normal reaction is not necessarily a reasonable one. An impulsive reaction may be normal, but impulse does not spring from reason. To accept the development of knowledge and consequent changes in technology while at the same time impulsively fearing the social and cultural changes that must inevitably follow, indicates that our profession has been more successful in objectively reasoning about the virtues of knowledge and technology, but has not been so successful in its objectivity toward social and cultural changes. It is clear, therefore, that we have not been reasonable about social and cultural changes, and this is mainly due to our restricted understanding of the implications. Medical science and technology cannot be divorced from science and technology in general. Even the superficial observer of history is acquainted with the fact that our present stage of knowledge and technology could not have developed without the kaleidoscopic social and cultural changes which accompanied the industrial revolution and which have been taking place more and more rapidly ever since. Those who expect technological changes to take place without concommitant social changes are living in a dream world, and those who consider themselves reasonable and still oppose through fear the observable social changes in the modern world are basing their opposition and fears on a profound invalidity. There should be apprehension to the coming of

change, but the apprehension should be the stimulus to try to understand the forces involved in the process of change and to try to direct the change in the channels that will be best for the society.

If the apprehensions of organized medicine are directed toward such changes as may possibly prevent the practice of medicine in an atmosphere not conducive to creativeness, to freedom of developing one's potentialities and predilections, to social recognition of one's contributions to society, and to a livelihood commensurate with one's social position, then such apprehensions are justifiable, since all these undesirable conditions could possibly come into being. It would even be reasonable for these apprehensions to become downright fears if there were no logical approach to prevent their happening.

Logic, Knowledge, and History

Is there then, a logical solution to this problem? There is evidence to believe that there is, and that the history of mankind points to *objective knowledge* as the instrument with which to do this. Therefore, our first step is to alert our consciousness that reason colored with a minimum of emotional overtones must prevail over ideation laden with emotional agitation. Accepting this, reason will also accept the premise that change is part of the process of social development and therefore is inevitable, and that the more rapidly knowledge accumulates and technology develops, the more rapidly would we expect concommitant social changes to take place. Under these circumstances the medical profession must work out its strategy and direct its organized will, being conscious of the three theses posited earlier in this paper. However, there is yet a fourth thesis that must be added at this point, and this thesis is the mainspring from which the hope, the expectation, and the faith is born that a strategy reflecting the organized will of the medical profession can be successful. This thesis can be stated as follows: *Man can shape his own world*, if he uses the existing conditions in his society as the matrix to work with. To be successful, however, he must understand the dynamics of the existing social conditions. This knowledge will give him the instruments to shape the future by directing, as far as is possible, the forces at hand for the well-being of the individual and the society. Equipped in this manner, we, the medical fraternity, can help to make our own history.

The organized will of the medical profession, however, cannot successfully contend against the organized will of society. It can, however, help society to realize its hopes and desires by planning with it and directing its desires into channels capable of creating conditions best suited for the profession to give its best in maintaining the highest standard of medical practice.

Since community health programs tend eventually to find a harbor in the administration of government, the medical profession must seek to ally itself with government, and to express its leadership in government health administration. And since boards of health and health departments are the most universal of government agencies that are administrated by physicians, the logical ally of organized medicine in government is the public health physician.

Regaining Leadership

Medical leadership in community health programs, therefore, can be most aptly regained:

1. By the alliance of organized medicine with public health agencies. These are natural allies. Both are inspired by the same heritage and both are steeped in the same ethical philosophy. The health officer and private practitioner belong to the same fraternity; their work is complementary; their aims towards society are the same, although approached from different but converging paths.

2. By organized medicine and public health agencies jointly studying the community's health problems and needs, and becoming the pioneers in proposing and implementing community health pro-

grams. We must anticipate the community's changing health needs, and not wait to be prodded into action.

3. By insisting that community health programs conducted by government be planned, organized, and administered by medically directed agencies such as health departments in order that both the people's and physicians' interests be protected.

We, physicians, must join the inevitable march of events. Let us anticipate the people's needs, hopes, and desires. Let us be continually forging community health programs to meet the changing needs of the people. Only then will we, the whole medical fraternity, be able to influence the shape of events to come, and to preserve the essential elements of physician-patient-government relations, the institution of private practice, and the physician's freedom to pursue his professional aspirations in the best course of his tradition.



Transactions of the American Medical Association
Instituted 1847, Vol. XXX, 8 vo. pp. 1028, Philadelphia, 1879

The present, being one of the largest volumes issued by the Association, contains much matter of the highest interest and value, and indicates that its vitality is not entering on a decline with advancing age.

The address of the President, Dr. Theophilus Parvin, is upon **Teleology**, in which he takes the ground that the old doctrine of creative design in the universe is not superseded by the modern doctrine of evolution, but may be made to harmonize with it. Abundant quotations from philosophers and men of science are adduced to support his position, and his paper is interesting and valuable, though probably not convincing to pronounced evolutionists.

* * * *

The **Address in State Medicine and Hygiene** was made by Dr. John S. Billings, U. S. A. He strongly advocates the utility of the registration not only of deaths but of diseases, as furnishing a more accurate index of the state of the public health than simple mortuary statistics. In this he is undoubtedly right, but we fear that his scheme will never become practicable in our day.

A very instructive paper follows on **State Medicine and State Medical Societies**, by Dr. Stanford E. Chaille, of New Orleans.

Reviews and Book Notices: New Orleans M. & S. J. 7:836 (February) 1880.

The Journal of the Louisiana State Medical Society

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Editorial

Officers of the Louisiana State Medical Society

The Louisiana State Medical Society in its recent Annual Meeting in Baton Rouge, from May 2, to May 4, elected officers for the coming year. The choices which have been made are a credit to the Society and an honor to the recipients.

The President is Dr. O. B. Owens of Alexandria, who is well known to all the physicians of the State, and who is a valiant worker in the cause of organized medicine. He brings to the office mature judgment, resulting from years of work for the good of the Society and the presidency is a most fitting tribute to him. We can confidently expect that he will guide the organization in these difficult times with professional skill and with effective leadership.

The President Elect is Dr. Cuthbert J. Brown of New Orleans, a surgeon well known locally and throughout the State. Dr. Brown has been active in the Orleans Parish Medical Society of which he is a Past President. He has been Chairman of the Committee on Congressional Affairs, and has served on many committees of the State Society. His stability, knowledge, and high regard for his fellow practitioners is respected by all. His friends and fellow physicians are happy that he has been so honored.

Dr. Arthur D. Long, of Baton Rouge, retires from the position of immediate Past President. He will continue to be active in our councils and to render his valuable assistance in the difficulties which face us. The Society is greatly indebted to him for his two years as President and Past President, and has great satisfaction in the fact that he is still available when needed.

The first Vice President is Dr. Frank Jones of Baton Rouge, to whom the membership is greatly indebted as the Chairman of Arrangements for the recent meeting. His efforts on behalf of the Society were most effective, and for this the membership is appreciative.

Dr. William C. Rivenbark of New Orleans, an outstanding pediatrician con-

tinues among the Vice Presidents to the pleasure of all. The Third Vice President is Dr. S. L. Gill of Shreveport who brings to the Executive Committee a broad experience in the Caddo Medical Society and gives promise of adding much to the stability in the counsels of the organization.

The membership of the Council shows only one change. Dr. J. E. Clayton of Norco was re-elected councillor for the Second District; Dr. C. E. Boyd of Shreveport for the Fourth; and Dr. Henson S. Coon of Monroe for the Fifth. Dr. Felix A. Planche, who has been long a Councillor for the First Congressional District, requested retirement and Dr. Spencer B. McNair of New Orleans was elected to this position. Dr. McNair, a prominent Ear, Nose, and Throat specialist, is known far and wide as an effective organizer. His confreres in college, his associates and classmates in medical school, staff members at the hospital, and his fellow practitioners acclaim his ability and resourcefulness. His direction as Councillor will give general satisfaction.

Dr. W. Robyn Hardy becomes immediate Past President. He takes with him into this situation the satisfaction of having had a fruitful year as our organization's chief executive. His care and decision in difficult situations was commendable. He has set a pattern which others will attempt to attain. It is a source of security to know that Dr. Hardy continues to be available in the service of organized medicine.

The other officials of the Society remain the same. It is a source of satisfaction to the officials of the organization and a compliment to the membership that the Society's affairs through a succession of years have been administered so well in a period beset by constant recurrence of threats against the proper practice of medicine.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

ABSTRACTED MINUTES HOUSE OF DELEGATES

May 2-4, 1960

Minutes

Minutes of 1959 meeting of *House of Delegates* approved as recorded.

Minutes of meetings of *Executive Committee* since 1959 meeting of House of Delegates approved.

Special Order

Introduction of *new members of House of Delegates.*

Talk by Dr. F. J. L. Blasingame, *Executive Vice-President of American Medical Association.*

Greetings from representatives of *Woman's Auxiliary* of the State Society and of the AMA.

Announcement of *scientific exhibit awards*: First place, Drs. Brierre and Garcia-Oller and Mr. Smith, R.T.; Second place, Drs. Haik, Nowell and Ellis.

Resignation of *Dr. E. L. Leckert as* Chairman of Committee on Journal, Chairman of Committee on Budget and Finance, Chairman of Committee on Committees, Chairman of Committee on Domicile, Chairman of Nominating Committee and Chairman of the Advisory Committee to the Woman's Auxiliary was accepted, with regret and announcement was made concerning doctors to fill the vacancies on these committees. Wire sent to Dr. Leckert expressing appreciation for many years of service rendered the House of Delegates and the Society. The members of the House also stood in honor of this service.

Roll of *members who died since 1959 Annual Meeting* read and members of House stood in honor of these members.

Reports without Recommendations

Following *reports accepted as printed*:—Secretary-Treasurer, Chairman of Council, Councilors: First District, Second District, Third District, Fourth District, Fifth District; Sixth District, Seventh District, Eighth District; Committees: Accreditation of Hospitals, Aid to Indigent Members, Alcoholism, American Medical Education Foundation, Arrangements — 1960 Annual Meeting, Blood Banks, Child Health, Chronic Diseases, Committees, Congressional Matters, Diabetes, Domicile, Gamma Globulin and Salk Vaccine, Hospitals, Industrial Health, Lectures for Colored Physicians, Liaison with Louisiana State Nurses Association, Maternal Welfare, Mediation, Medical Defense, Medical Education, Medical Testimony, National Emergency Medical Service, Neuropsychiatric Service at Charity Hospitals, Public Health of the State of Louisiana, Scientific Work, State Department of Public Welfare, State Hospital Policies and Medical Indigency, Woman's Auxiliary.

Other reports, containing no recommendations, accepted: Louisiana State Board of Medical Examiners, (recommendations in re vacancies included in "action taken"), Public Relations Counselors, Legislative Consultant and delegates to American Medical Association.

Reports with Recommendations

President: Referred to Committee on President's Report and action taken as follows: 1. The Society continue to support and maintain the liaison group which has been established with the Louisiana Hospital Association and the Louisiana Nurses Association: Approved. 2. All socialistic types of legislation (eg. the Forand Bill) be vigorously fought by every Society member interested in maintaining his freedom: Approved; recommend individual member's support. 3. Society members give their active support to the Smathers-Morton-Keogh-Simpson Bill which, at this writing, is being closely watched: Approved. 4. The Society continue and expand its sponsorship of Medical Progress exhibits at the Louisiana State Fair as this has proved to be one of the most outstanding and successful positive public education projects in which the medical profession in Louisiana has ever participated: Approved: active participation of members recommended. 5. The Society continue the services of our Public Relations Counselors and Legislative Consultant who have performed such valuable work during the past five years: Approved: endorse periodic paid advertisements. 6. Society members be encouraged to increase the scope of their contributions to the American Medical Education Foundation: Approved. 7. All eligible non-members of the AMA be encouraged to join, and copies of our new brochure, explaining the benefits of membership, be circulated among these doctors: Approved. 8. Each member of the Society whose wife is not presently a member of the Woman's Auxiliary pay her dues ($1.50 per year), thereby enrolling her in the Auxiliary; also encourage their wives to take active part in the work of the Auxiliary: Approved. 9. The Society continue to support the Louisiana State Board of Medical Examiners in every possible way in the campaign to protect the Medical Practice Act: Approved. 10. The Society give careful study and consideration to the work of the National Foundation before any type of official approval or recognition is given to the Foundation: Approved; advise each member through CAPSULES of resolution passed by House of Delegates in 1959. 11. Society members begin work on organizing an independent group of physicians for political action; membership in this organization to be completely voluntary and legally separate from the State Society: Approved; American Association of Physicians and Surgeons membership recommended.

Past Presidents Advisory Council: 1. Approval of recommendation in report of Committee on Budget and Finance Committee —"Disapproval of purchase of Volumes I and II of History of Louisiana State Medical Society." Recommendation taken care of by action of House in adopting recommendation of Committee on Budget and Finance. 2. Approval of recommendation in report of President in re Smathers-Morton-Keogh-Simpson Bill: Recommendation taken care of by action of House in adopting recommendation in report of the President. 3. Approval of recommendation in report of the Committee on Public Policy and Legislation that services of Mr. Percy J. Landry, Jr., be continued and that his yearly salary be increased appropriately through the Committee on Budget and Finance: Recommendation taken care of by action of House in adopting recommendation in report of Committee on Budget and Finance. 4. Recommend that the House of Delegates pass a resolution condemning Forand-type legislation in its various forms and express the earnest hope that the Ways and Means Committee will continue to reject this type of socialistic legislation: Approved. 5. Recommend that that portion of the change in By-Laws dealing with status of inactive members be approved in principle but that the wording be changed to conform with that of the AMA which classifies these members as "Active Dues-exempt Members": Approved.

Committee on Budget and Finance: 1. Disapproval of purchase of Volumes I and II of the History of the Louisiana State Medical Society: Approved. *Supplemental report*: 1. Annual salary of Mr. Percy J. Landry, Jr., Legislative Consultant, be increased to $10,000.00 with the understanding that he shall represent only the Louisiana State Medical Society in legislative matters: Approved. 2. Amount not exceeding $900.00 be appropriated for fulltime nurse to staff the first aid station in the Louisiana State Capitol during legislative sessions: Approved.

Cancer Commission: 1. Members of the Society be urged to heighten their interest and activities in both lay and professional education concerning the diagnosis and treatment of cancer: Approved. 2. All members of the Society who may be called upon for the early detection of cancer review their office equipment and their practices in this respect, with particular attention to the collection and submission of material for cytologic diagnosis and for biopsy of suspicious tissue: Approved. 3. Amount of $500.00 be budgeted for use, if necessary, in accomplishing the purposes of the Cancer Commission: Referred to Committee on Budget and Finance.

Committee on Federal Medical Services: 1. House of Delegates unanimously authorize a resolution stating emphatically the reasons the Forand Bill is no prescription for a healthy nation: Withdrawn in lieu of recommendation of Past Presidents Advisory Council. 2. If practicable, the above resolution be signed by all officers and delegates of the House of Delegates present, with photostatic copies sent to each member of the respective cognizant congressional committees, and to each member of the Louisiana delegation in Congress: Withdrawn in lieu of recommendation of Past Presidents Advisory Council. 3. House of Delegates refer renewal of Uniformed Services Medicare Contract for the year 1960-61 to the Executive Committee for decision at the time of the October negotiation: Substitute motion, not to renew Medicare contract, passed. 4. House of Delegates reassert the position that VA federal medical services should be limited to service-connected injuries and illnesses: Approved.

Committee on Geriatrics: 1. All people be encouraged to enroll in some form of hospitalization plan; this hospitalization to remain in force after retirement; those who have retired and are not covered, be encouraged to enroll on an individual basis: Approved, with addition "medical and surgical" plans. 2. The Society go on record as recommending that all medical and surgical fees be reduced for people sixty-five years of age and over: Withdrawn. 3. The Society go on record as recommending an increase in nursing home facilities throughout the state, preferably on a private enterprise basis, and the improvement of those nursing homes now in existence: Approved, deleting "preferably". 4. Encourage the consideration of increasing bed space for aged, convalescent patients in future hospital building programs: Approved.

Committee on Historian: 1. Dr. Isidore Cohn, Sr., of New Orleans, be selected to serve as historian of the State Society: Announcement that Dr. Cohn refused appointment; no action taken in re appointment; Committee to be continued to secure a historian.

Committee on Insurance: 1. Investigation again be made concerning feasibility of purchasing professional liability (malpractice) insurance: Approved. 2. Doctors throughout the state show some interest in the Health Insurance Council; when invited by the Council, it would be wise and enlightening for doctors and representative groups from the state and/or parish societies to meet with this Council: Approved.

Committee on Journal: 1. Re-election of Dr. C. M. Horton as a member of the Committee on Journal: Referred to Nominating Committee and recommendation of this Committee that Dr. Horton be re-elected, approved.

Committee on Louisiana Organizations for State Legislation: 1. Committee on LOSL be continued: Approved. 2. Committee on LOSL be instructed concerning legislation being considered by the Louisiana State Medical Society: Approved.

Committee on Medical and Hospital Service in re Insurance Contracts: 1. The Louisiana State Medical Society go on record as recommending that when a hospital business office presents a bill to a patient for services which includes services of a physician, the bill clearly state that a portion of the bill is for professional service and also include the name of the physician involved: Approved. 1. The Committee on Liaison with the Louisiana Hospital and Louisiana Nurses Associations be instructed to contact representatives of the Louisiana Hospital Association with the request that this information be transmitted to the hospitals involved for appropriate action: Approved.

Committee on Mental Health: 1. The Committee on Mental Health be made a standing committee of the Louisiana State Medical Society and that it be composed of members with overlapping terms: Tabled. 2. The Committee on Mental Health be recognized by the State Society as the body for liaison with the Governor, State Department of Hospitals and State Department of Institutions, concerning matters of mental health: Tabled. 3. Recommendation be made to appropriate authorities that a fully qualified administrative psychiatrist be secured to administer the State Mental Health Program: Tabled. 4. The State Society stimulate conferences focused on ways to close the gap between Organized Medicine and the public mental hospitals: Tabled. 5. The State Society encourage parish and district societies to include more presentations on mental health in their programs: Tabled: 6. The State Society encourage development of conferences on psychiatric orientation of non-psychiatric physicians: Tabled. 7. The State Society encourage the parish societies and members of these organizations to take greater part in educational programs in mental health for the general public: Tabled. 8. Wherever applicable, interest in programs for the mentally retarded be included as a part of the above recommendations: Tabled.

Committee on Public Policy and Legislation:

1. Louisiana State Medical Society sponsor a series of spot newspaper advertisements of an informative nature regarding health legislation: Approved. 2. Louisiana State Medical Society circulate recorded TV and radio programs for statewide distribution: Approved. 3. Louisiana State Medical Society underwrite employment of a fulltime nurse to staff the first aid station in the Louisiana State Capitol during legislative sessions: Referred to Committee on Budget and Finance and recommendation of that Committee that an amount not exceeding $900.00 be appropriated for this purpose, approved. 4. Louisiana State Medical Society write the Louisiana State Board of Medical Examiners, suggesting that at least one question on the State Board Medical Examination shall be related to cultism: Withdrawn. 5. Information be given to all interns and residents upon completion of their training regarding cultism and its dangers: Approved. 6. Louisiana State Medical Society oppose endorsement of the licensing of paramedical technical groups: Approved, with addition "at 1960 session of Legislature." 7. Services of Mr. Percy J. Landry, Jr., as Legislative Consultant, be continued: Approved. 8. (Not included in printed report.) Liaison Committee appointed to work with physiotherapy technicians: Approved.

Committee on Resolutions: 1. A copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society: Approved.

Committee on Rural and Urban Health: 1. Committee on Rural and Urban Health be continued, consisting of one member from each Congressional District and including only those who will serve: Approved. 2. Preceptorship program be worked out in cooperation with the Louisiana Academy of General Practice: Referred to Executive Committee. 3. A constant survey be kept on the nursing situation as it affects rural people: Tabled. 4. Headquarters office of the State Society furnish secretarial and other assistance necessary to carry out a program of rural health: Withdrawn. 5. Funds be appropriated to take care of above: Referred to Committee on Budget and Finance.

Council on Medical Service and Public Relations: 1. Production of new recorded talks on chiropractic to be used in connection with the forthcoming session of the Legislature: Approved. 2. Preparation of a simple, inexpensive pamphlet designed for laymen and explaining the dangers of chiropractic, with emphasis on Louisiana: Approved. 3. Preparation of a simple legislative directory which could be sent to all members of the State Medical Society. (The directory would contain a map of Louisiana by parishes and congressional districts, and would include all state senators and representatives and members of the United States Congress. This piece would be designed in such a way that members could keep it as handy reference to be used when called upon to contact members of the Legislature.): Approved. 4. Subject to budgetary consideration, preparation of a 15-minute sound film on chiropractic suitable for showing to lay as well as professional audiences. (The production cost of the film would be approximately $600.00 plus the cost of reprints): Referred to Committee on Budget and Finance. 5. Continuation and expansion of CAPSULES, MEDICAL PROGRESS and educational campaigns such as the recent tetanus and polio programs: Approved. 6. Society continue to place health exhibits at appropriate fairs when possible: Approved.

AMENDMENTS

Constitution

Amendments approved; final action to be taken at the 1961 Annual Meeting:

Article IV—Composition of the Society: Add "resident" to intern members and change "inactive" to "active dues exempt".

Article IV—Section 3. Honorary Members: Delete "but shall not be permitted to hold office".

Article IV—Section 4. Inactive Members: Change "inactive" to "active dues exempt" and delete "nor shall they be eligible to hold office". Add "They shall be eligible to vote and hold office".

Article IV—Section 5. Intern Members: Change to "Intern/Resident" members.

Article VII—House of Delegates: Reword last part as follows: "... (3) an Advisory Body composed of Past Presidents with full voting power."

Article X—Section 1. Officers: Add "for one year following his retirement" in re term of office of retiring president.

Article X—Section 3. Officers: *Add* "nominated on the first day of the annual session by the House of Delegates and".

Article XIV — Amendments: Change "registered" to "present" in re vote of delegates.

By-Laws

Chapter I — Section 1. Membership: Change last portion as follows: "Associate and intern/resident members shall not be eligible to vote and hold office."

Chapter I—Section 3. Membership: Reword last portion as follows, changing "disability": "... until such time as he has been relieved of such suspension or explusion."

Chapter I—Section 4. Membership: Add "his or her" before "right" and "membership".

Chapter II—Section 3. Meetings: Add "honorary and active dues exempt" in re members entitled to participation in proceedings; and "endorsed by the Budget and Finance Committee" in re expenditures.

Chapter IV—Section 1. House of Delegates: Reword last sentence as follows: "On the first day of the session of the House of Delegates the Chairman and Vice-Chairman for the ensuing

year shall be nominated and these officers shall be elected on the last day of the session."

Chapter IV—Section 2. House of Delegates: Change "thereof" to "of twenty-five thereof" in re number of delegates allowed.

Chapter IV—Section 3. House of Delegates: Change "registered delegates" to "registered members of the House of Delegates" in re quorum.

Chapter IX—Section 6. Committee on Medical Defense: Change "entitled to an honorarium of $10.00 per diem with traveling expenses" as follows: "... Each member of the Committee on Medical Defense of this Society, if required to go out of town in the investigation of any case or in attendance at court shall be entitled to reimbursement of expenses thereto. This same provision shall be applicable to expert witnesses under similar circumstances..."

Chapter IX—Section 10. Committee on Scientific Work: Change "60 days" to "six weeks" for chairmen to submit scientific program.

Chapter XI—Section 1. Assessments and How Payable: Add "resident" members.

Chapter XI—Section 5. Reword as follows: "Physicians, with proper qualifications, may send their dues direct to the State Society when the parish or district society in which they have held membership becomes inactive."

Chapter XV—Section 5. Qualifications of Members: Change "such physician" to "eligible physician".

Chapter XV—Section 8. Transfer of Membership: Change "such society" to "said society".

Chapter XV—Section 12. Delegates: Add "in person" in re appointment of alternate delegates.

Other Action

Recommendations in re *Department of Welfare Vendor Payment Plan*: 1. The House of Delegates of the Louisiana State Medical Society disapprove, for the third time, the Vendor payments to physicians for the treatment of patients because same constitutes socialized medicine: Tabled. 2. The Louisiana State Medical Society Advisory Committee to the Welfare Department be dissolved and removed from the list of committees: Tabled. 3. Any physician who enters into a contract with the Welfare Department for the treatment of patients knows that he does so without the approval and against the wishes of the Louisiana State Medical Society, and be it further resolved that a copy of the above resolutions as adopted, be sent to each and every physician in the State of Louisiana: Tabled.

Approval of appointment of a *Committee on Tetanus Protection.*

Recommendation in re *two signatures* on *Department of Welfare* checks not approved.

Criticism of *newsletter published by Senator Russell Long* on August 10, 1959, in re opposition expressed to HR 10 before the United States Congress; material contained in newsletter and reply of Louisiana Organization for Self-Employed to be published in CAPSULES.

Recommendations to Governor in re *vacancies on Louisiana State Board of Medical Examiners*: Dr. Rhett McMahon and Dr. J. Webb McGehee in re vacancy of term of Dr. McMahon. Dr. J. T. Willis and Dr. Charles B. Odom in re vacancy of term of Dr. E. L. Leckert if resignation submitted by Dr. Leckert is accepted by the Governor.

Resolution in re *three-year nursing training program* approved: "Recognizing the acute shortage of nursing personnel in our area, brought about by the limited number in the present training programs and the increase in hospital beds, the delegates to the Louisiana State Medical Society from the Shreveport Medical Society wish to introduce the following resolution for consideration by the 1960 House of Delegates. We, the members of the House of Delegates of the Louisiana State Medical Society, do hereby resolve that there is a definite need for more three-year diploma nursing training programs within the State of Louisiana."

Approval of *appointment of a committee* to ask the Louisiana State Bar Association to appoint a committee to meet with a committee of the Louisiana State Medical Society to discuss, in detail, the matter of the number of *medical malpractice suits* and the possibility of cutting down of the maligning effect on the medical profession.

Matters Discussed—No Action Taken

Dismissal of *suit* brought by chiropractors *against Louisiana State Board of Medical Examiners.*

Practice of *chiropractors.*

Communications

Greetings from the Executive Director of the *American Nursing Home Association.*

Action of Health, Education and Welfare Department with regard to financial assistance for *medical care of the elderly.*

Election of Officers, Delegates and Alternates to AMA and Committees

President-elect—Dr. Cuthbert J. Brown, New Orleans.

First Vice-President — Dr. Frank J. Jones, Baton Rouge.

Second Vice-President—Dr. Wm. C. Rivenbark, New Orleans.

Third Vice-President—Dr. S. L. Gill, Shreveport.

Chairman, House of Delegates—Dr. Charles B. Odom, New Orleans.

Vice-Chairman, House of Delegates—Dr. H. H. Hardy, Jr., Alexandria.

Councilor, First District—Dr. Spencer B. McNair, New Orleans.

Councilor, Second District—Dr. J. E. Clayton, Norco.

Councilor, Fourth District—Dr. C. E. Boyd, Shreveport.

Councilor, Fifth District—Dr. Henson S. Coon, Monroe.

Delegate to AMA (1961 and 1962)—Dr. P. H. Jones, New Orleans.

Alternate Delegate to AMA (1961 and 1962)—Dr. Edwin L. Zander, New Orleans.

Committee on Committees: Dr. Edwin L. Zander, Chairman; Dr. J. Kelly Stone; both of New Orleans; Dr. Rhett McMahon, Baton Rouge.

Committee on Journal: Dr. C. M. Horton, Franklin; Dr. M. D. Paine, New Orleans.

Committee on Medical Defense: Dr. C. B. Erickson, Shreveport, Chairman.

Committee on Public Policy and Legislation: Dr. Joseph A. Sabatier, Jr., Baton Rouge, Chairman; Dr. N. J. Chetta, New Orleans; Dr. J. E. Clayton, Norco; Dr. Leo J. Kerne, Thibodaux; Dr. C. E. Boyd, Shreveport; Dr. Edward J. Brown, Monroe; Dr. Jack E. Thielen, Lake Charles; Dr. F. P. Bordelon, Marksville.

Future Annual Meetings

Dates and Places: 1961—New Orleans, May 8-10; 1962—Monroe, May 7-9; 1963—New Orleans, May 6-8; 1964—Alexandria.

COMMITTEE ON MEDICAL DEFENSE

During the year, March 1, 1959 to March 1, 1960, this Committee has been requested to arrange for legal assistance in the following cases involving claims of malpractice.

1. This request for defense was not authorized by the Committee due to non-compliance with the provision of the By-Laws requiring a statement not to compromise or settle the case without agreement of the Committee, due to the policy of the doctor's insurer.

2. Claims damages in the amount of $950,000.00 against the doctor and a firm of manufacturing chemists. Petition claims that the drug was poisonous and/or administered improperly, resulting in loss of hearing and equilibrium and possibly contributing to the death of the patient. Has not come to trial.

3. Claims malpractice in an obstetrical case in which the patient refused hospitalization contrary to insistence of the doctor that she report to the hospital, which resulted in fetal death before reporting to the hospital. Case set for trial May 9, 1960.

4. Represents a claim for liability in the amount of $150,000.00 against insurer of the doctor, alleging permanent loss of taste and smell following operation. This case has been dismissed.

In a case first submitted to the Committee in December, 1958, complete data was not furnished until September, 1959. Defense was recommended but there is no further report of action.

A case reported in 1958 was settled for assumption of court costs.

All other cases from previous years, not specifically mentioned, are pending final action.

C. B. ERICKSON, M.D., Chairman

REPORT OF COMMITTEE ON RESOLUTIONS

The members and guests in attendance at the 1960 Annual Meeting of the Louisiana State Medical Society held in Baton Rouge May 2-4 wish to acknowledge, with thanks, assistance rendered by the following individuals and groups:

Dr. Julius H. Mullins, President; Dr. Frank J. Jones, Chairman, personnel of Committees on Arrangements and all members of the East Baton Rouge Parish Medical Society, hosts to the meeting.

Rev. Philip P. Werlein who offered the invocation at the official opening meeting of the Society.

Hon. Jack Christian, Mayor-President of the City of Baton Rouge, for his cordial welcome to the city.

Dr. F. J. L. Blasingame, Executive Vice-President of the American Medical Association, for his talk before the House of Delegates and for the Annual Oration presented at the opening meeting.

The following out-of-state guests who participated in the scientific program:

Dr. Temple Ainsworth, Jackson, Mississippi

Dr. George L. Jordan, Jr., Houston, Texas

Dr. Robert D. Moreton, Fort Worth, Texas

Dr. John H. Moyer, Philadelphia, Pennsylvania

The Baton Rouge papers as well as the press throughout the state for publicity prior to and during the time of the meeting.

Radio and TV stations throughout the state, for excellent cooperation in broadcasting specific phases of the meeting.

The Capitol House, Headquarters for the meeting, for excellent services rendered members attending the meeting, as well as facilities for various sessions in connection with the meeting; also other hotels and motels in Baton Rouge for accommodations furnished.

The Catholic Physicians Guild of Baton Rouge for arranging a Memorial Mass in memory of those members of the Society who died during the past year.

Mr. Paul J. Perret and Mr. Paul R. Kalman, Jr., who have rendered a most valuable service prior to and during the meeting as Public Relations Counselors in securing publicity for the meeting; also for their report presented to the House of Delegates.

Mr. Percy J. Landry, Jr., Legislative Consultant, who has continued to be most helpful to the medical profession, for his informative talk before the House of Delegates.

Scientific exhibitors whose exhibits add much interest to the meeting.

Pharmaceutical, surgical and other companies for their continued cooperation in having technical exhibits.

All companies which purchased space for advertising in the Program.

The Sherwood Forest Country Club for facilities furnished for the golf tournament. The Baton Rouge Country Club for arrangements for the most enjoyable Hawaiian Luaua. The Baton Rouge City Club for facilities for the cocktail party for technical exhibitors.

Dr. Edwin H. Lawson, Secretary of the Louisiana State Board of Medical Examiners, for his report submitted to the House of Delegates.

Officers and members of the Woman's Auxiliary who prepared an interesting program for the members of the Auxiliary.

Dr. W. Robyn Hardy, who has served so capably during the past year as President of this organization.

The Past Presidents Advisory Council for report to the House of Delegates and their continued active interest in the organization.

Dr. Charles B. Odom, Chairman of the House of Delegates.

Dr. C. Grenes Cole, Secretary-Treasurer who has continued to render invaluable services to the organization.

Miss Annie Mae Shoemaker, Assistant Secretary-Treasurer, and the entire secretarial staff for their efficient handling of details prior to and during the time of the meeting.

Recommendation

It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.

ARTHUR D. LONG, M.D., Member
C. J. TRIPOLI, M.D., Member
SAM HOBSON, M.D., Chairman

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

NEW OFFICERS—THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-fourth annual meeting of The New Orleans Graduate Medical Assembly will be held March 6-9, 1961, headquarters at The Roosevelt Hotel.

The following officers and members of the Executive Committee have been elected for this year:

Dr. Maurice E. St. Martin, President
Dr. Barrett Kennedy, President-elect
Dr. Ralph M. Hartwell, First Vice-president
Dr. Boni J. DeLaureal, Second Vice-president
Dr. J. Theo Brierre, Third Vice-president
Dr. Mannie D. Paine, Jr., Secretary
Dr. Max M. Hattaway, Treasurer
Dr. W. E. Kittredge, Director of Program
Dr. Walter F. Becker, Assistant Director of Program
Dr. Daniel W. Hayes, Assistant Director of Program

Members of the Executive Committee include Doctors Ambrose H. Storck (retiring President), Richard L. Buck, Lee D. McLean, John G. Menville and Daniel C. Riordan.

THE SCIENTIFIC EXHIBIT AMA CLINICAL MEETING, WASHINGTON, D. C.

November 28 - December 1, 1960

Application forms for space in the Scientific Exhibit at the Washington, D. C. Clinical Meeting of the American Medical Association, November 28 to December 1 are now available.

They may be procured by writing directly to Charles H. Bramlitt, M. D., Director, Department of Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois. Applications close on August 1.

The "Hull" award will be presented for the first time at this meeting to the best exhibit on a scientific subject which has not been previously shown at a medical meeting. The award will consist of a gold medal and an honorarium of $250. The winning exhibit will be approved for showing in the Scientific Exhibit at the 1961 Annual Meeting of the AMA which will be held in New York City.

Dr. Thomas G. Hull will personally present the award to the recipient.

OCHSNER CLINIC APPOINTS NEW MEDICAL DIRECTOR

The Ochsner Clinic has announced the appointment of Dr. Merrill O. Hines as Medical Director for the Clinic, and the retirement of Dr. Guy A. Caldwell from the position, May 1.

Dr. Caldwell, a founding partner of the Clinic and its Medical Director since 1954, will continue to serve as a Trustee and vice-president of the Alton Ochsner Medical Foundation. In addition, he will act as a consultant to the Clinic's Department of Orthopedic Surgery, which he headed from 1942 until his retirement from active medical practice in 1957.

He is a former president of the American Academy of Orthopedic Surgeons and the American Board of Orthopedic Surgery, and is a member of the Council on Medical Education and Hospitals of the American Medical Association, and the Advisory Board of the Shriners' Hospitals for Crippled Children. Dr. Caldwell served on the faculty of the Tulane University School of Medicine as Professor and Chairman of the Division of Orthopedics from 1938 until his resignation in 1951.

Dr. Hines, head of Ochsner Clinic's Department of Proctology since 1946 and assistant Medical Director since 1954, is President-elect of the American Proctological Society. He is a member of the American Board of Proctology and the Residency Review Committee of the A.M.A.

A past president of the Southeastern Proctological Society, and a member of the Editorial Board of the Journal of Diseases of the Colon and Rectum, Dr. Hines holds appointment as Assistant Professor of Clinical Surgery at Tulane University School of Medicine.

MOST HEADACHES DON'T ORIGINATE IN THE HEAD

If you get a headache, the cause probably isn't in your head.

About 95 per cent of headaches result from conditions elsewhere in the body, according to an article in the March Today's Health, published by the American Medical Association.

"Such a simple thing as poor ventilation in a room, which results in an imbalance in the air you breathe, may cause a headache," said Dr. Adrian M. Ostfeld, University of Illinois College of Medicine, Chicago, in an interview with author Alfred Balk.

"Again, if you run a fever for any reason, the system is in an abnormal state and headache may result. If you skip a meal, your head may ache. If you concentrate on one task too long —whether it's reading or TV or driving a car— your muscles become strained, they over-contract, and then they cannot get enough blood. The result: headache.

" . . . in the end, it [the headache] probably is the result of a release of a 'pain substance' from nerve ends in the scalp, at the same time that arteries in the head have become dilated due to one cause or another."

The most common type of headache, he said, results from concentration on, or preoccupation with, something for too long a time.

It's also the easiest to cure, he added, usually disappearing if one changes position, relaxes, and takes an aspirin.

"Oddly enough, acetylsalicylate (aspirin) is an old standby, but we still aren't sure exactly what it does do," Dr. Ostfeld said.

Present medications have their place, he said, but they all have shortcomings. The ultimate drug will act on the pain substance and thus control the headache safely, he said.

This depends on advances in tissue biochemistry which may take several years, he pointed out.

"One problem is that you can't give headaches to laboratory animals; this research has to be done in man."

Dr. Ostfeld said headaches serve as an important warning signal of both mental and physical problems. But he stressed that brain tumor, often feared by persons with recurring headaches, turns out to be the cause in only about 3 out of 1,000 cases.

IPRONIAZID HELPS ALCOHOLICS; CAUSES NO SIDE EFFECTS

The successful treatment of alcoholic depression with iproniazid phosphate (Marsilid), a drug with a tendency to irritate the liver, has been reported in the Journal of the American Medical Association.

Dr. Julius C. Travis of the Adult Guidance Center, San Francisco Department of Public Health, reported on the use of the drug in 20 alcoholics in the Feb. 27 Journal.

Because of its effect on the liver, Dr. Travis said, "the drug was, and apparently still is,

considered dangerous for the alcoholic patient, who already may be a victim of liver disease."

However, he prescribed the drug in cases where the patient was depressed to the state of possible suicide and had no history or current evidence of liver disease.

Among the 20, all outpatients, six showed excellent results, six good results, four fair results, and four poor results.

No side effects were observed. There were no cases of hepatitis or liver involvement. There were no suicides and no patients were sent to a hospital.

Dr. Travis concluded that iproniazid is "beneficial" to severely depressed alcoholics when the patient appears to be free from past or present liver trouble; the drug is given with pyridoxine to control adverse side effects; the risk of drug complications is much less than that of death or extensive hospitalization, and the patient is not drinking.

"It also seems to have helped these patients to refrain from continued use of alcohol as a cure for their depression," he said. "It is probable that the occurrence of suicide or hospitalization (and also just plain misery) has been reduced by the use of iproniazid. . . . "

Dr. Travis said psychotherapy alone in such cases is "inadequate."



BOOK REVIEWS

Metabolic Aspects of Renal Function; by William D. Lotspeich, M. D., Springfield, Illinois, Charles C Thomas, 1959, pp. 214. Price $7.50.

This monograph is, as the author states in his preface, a selected series of topics, essays, or themes which struck him as of particular interest. These revolve largely about renal tubular mechanisms for transport of phosphate, glucose, amino acids, and ammonia. Some comments on the importance of the tricarboxylic acid cycle are the subject of another chapter. If little headway has been made in our understanding of the metabolic functions of the kidney it is not because available biochemical and metabolic data regarding general physiology have not been applied to the special case of the kidney by the author. One, however, gets the feeling that perhaps the biochemical systems thus far defined represent but a fragmentary part of the complex organization of the cell and as such offer too flimsy a scaffold on which to base theories of the renal function.

In his opening chapter the author reviews the evidence that oxygen consumption by the kidney is not importantly if at all related to external osmotic work calculated by classical thermodynamic formulae. The work actually performed in a kidney is in reality not susceptible to such an analysis since reabsorption and secretion are nonreversible discontinuous processes.

In his discussion of renal ammonia production the author takes the view that glutamire is the final common source. This is somewhat difficult to understand in face of the fact that many amino acids are equally, and some actually more, potent precursors of ammonia in the kidney. The important work of Coulsen and Hernandez in this regard has been overlooked or ignored.

The statement on page 124 that phenol red is cleared in man and dog at or near the rate of renal plasma flow is incorrect.

While this monograph is of interest to a select readership on intimate terms with the field, it has little to offer the general reader.

E. H. Bresler, M. D.

Anesthesia for Infants and Children; by Robert M. Smith, M. D. St. Louis, C. V. Mosby Company, pp. 418, 1959. Price $12.00.

This is a unique text which should be of great interest and use to all who are concerned with preoperative child care. Such persons, in addition to the anesthetist and surgeon, certainly include pediatricians, general practitioners, and nurses.

Dr. Smith is eminently qualified to expound on his subject, for he has been for several years in charge of anesthesia practices at the Children's Hospital in Boston. That so much of surgical merit has come from this institution is to a tremendous extent due to his efforts. The text is well printed, well bound, and well written in a very straightforward fashion, understandable to the non-anesthesiologist.

Pediatricians wil be interested in the chapter on preparing children for operation, since so much depends on an easy induction. His discussion of resuscitative equipment transcends the operating room emergency and is applicable to other situations all too frequently encountered. The "how to do it" method is carried throughout by means of the clear text and excellent photographs.

Pros and cons of endotracheal intubation occupy one chapter. In the same vein the normal recovery is considered, including the usual postoperative orders.

The specific problem of anesthesia in infants

less than one year of age is handled from the point of view of the indications for surgery in this age group (omphalocele, tracheoesophageal fistula, diaphragmatic hernia, and others).

The unique anesthesia requirements and technics of the various surgical specialities are considered in considerable detail—thoracic surgery, plastic surgery, orthopedic surgery, neurosurgery, ENT surgery, and dental surgery.

The book is completed by chapters on fluid therapy and blood replacement, respiratory resuscitation, oxygen therapy, and a discussion on some of the legal aspects of pediatric anesthesia.

Of special interest to doctors who advise or undertake elective pediatric surgery is the chapter on mortality in pediatric surgery and anesthesia.

This text fills a great need and, if read by the critical individuals, will surely help to make pediatric anesthesia a happier and safer necessity.

WILLIAM W. WARING, M. D.

Synopsis of Ophthalmology; by William H. Havener, C. V. Mosby, St. Louis, Mo., 1959, pp. 288. Price $6.75.

The purpose of the author is to present "the practical viewpoint of the practicing ophthalmologist to help physicians in the diagnosis and management of eye diseases".

Writing of a work of this type is a difficult challenge because of the wide range of subject matter covered, none of which can be treated in authoritative detail. Because of this, the author must be guided by his own experience in what constitutes good and proper subject matter for presentation.

With these prefatory remarks, the reviewer would like to point out what he considers the virtues and weaknesses of this volume.

One of the best aspects of the work is the presentation of techniques of examination of the eye and adnexae. Particularly good is the section on the diagnosis and management of eye injury. Other sections not ordinarily found in works of this type are Chapter II, "The Meaning of Eye Symptoms", and 13, "Physiology of the Eye", both of which would appear to be useful additions.

The weakest part of the treatise is the material on ocular therapy. For example, the reviewer and most authorities could never agree to the statement: "Culture, smears, and sensitivity studies are neither economically feasible nor necessary in the treatment of these diseases" (viz: acute conjunctivitis, marginal blepharitis); and "Excellent results will be obtained with the use of arbitrarily selected topical antibiotics". These statements certainly are contrary to any rational principle of therapy, and the reader should beware lest he be misled.

The reviewer also finds serious fault with the material on the treatment of uveitis, especially concerning the author's indications for steroid therapy. It should be pointed out that the treatment of posterior segment granulomatous disease with systemic steroids is hazardous, at the very least. Greater emphasis should have been placed on the contraindications for the use of topical steroid therapy, the contraindications for the use of topical antibiotics, especially in ointment vehicles.

The commendable statement: "Crossed eyes indicate referral as soon as detected, no matter how young the child," should have been emphasized and included in the section devoted to the discussion of strabismus.

Finally, the sections dealing with the ocular manifestations of systemic diseases are very sketchy and not given the necessary emphasis for the audience for which this work is intended.

In summary, the reviewer feels that this work would not be suited for the teaching of medical students. Medical practitioners in many fields would find certain sections useful.

MONTE G. HOLLAND, M. D.

Aids to Neurology; by E. A. Blake Pritchard, 2d ed., Bailliere, Tindall and Co., Williams & Wilkins, 1959, pp. 376. Price $4.00.

Dr. Pritchard's book is one of the finest of the digests of Clinical Neurology now available. Its excellence lies in the fact that the material is organized about general physiological and anatomical concepts rather than consisting of numerous isolated facts. Such an effective presentation of basic concepts is particularly admirable in view of the necessity for brevity and condensation in a book of this type. The general comments on brain function are unusually well done; the presentation of this difficult subject is superior to that encountered in most of the larger standard textbooks.

The coverage is complete, including all of the major neurological disorders. Newer concepts of etiology, in the area of metabolic dysfunction are advanced. The illustrations are effective, especially those outlining areas of sensory loss in root and nerve lesions. This book will be of value to both undergraduate and graduate students in neurology.

A. W. EPSTEIN, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: Nine Months' Reading; A Medical Guide for Pregnant Women, by Robert E. Hall, M. D.

Grune & Stratton, Inc., N. Y.: Electrocardiographic Techniques; A Manual for Physicians, Nurses and Technicians, by Kurt Schnitzer, M. D. (2nd edit.).

W. B. Saunders Co., Phila.: Fundamentals of Clinical Hematology, by Byrd S. Leavell, M. D., and Oscar A. Thorup, Jr., M. D.

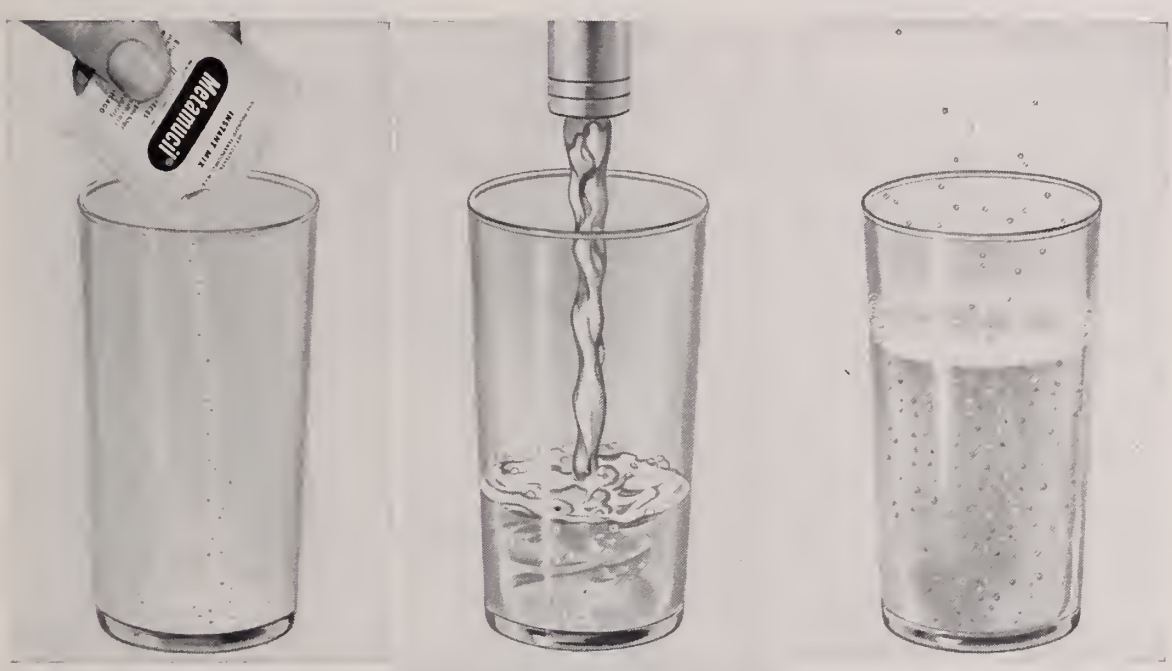
Williams & Wilkins Co., Balt.: Medical, Surgical, and Gynecological Complications of Pregnancy, by The Staff of the Mount Sinai Hospital, edited by Alan F. Guttmacher, M. D., and Joseph J. Rovinsky, M. D.

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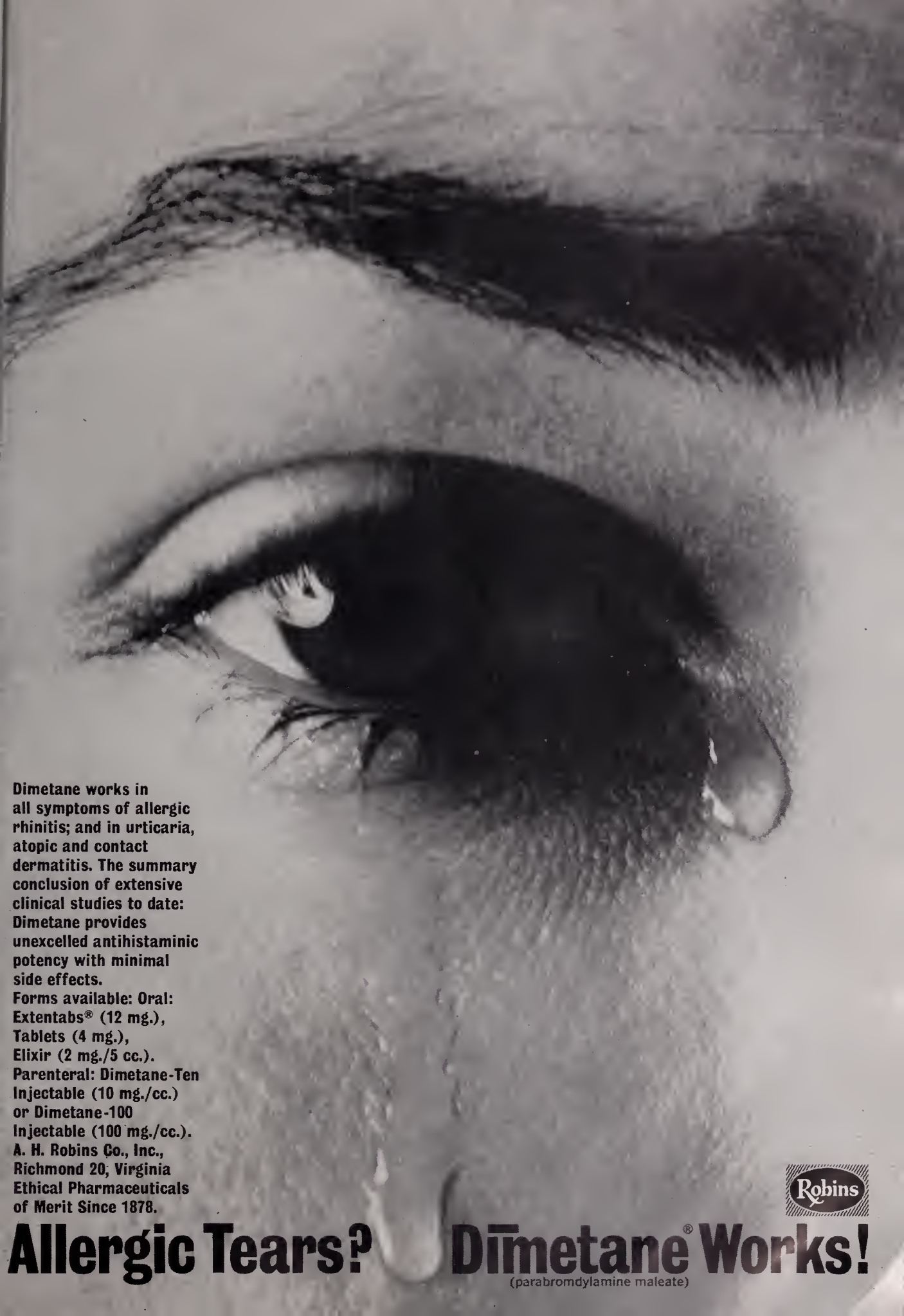
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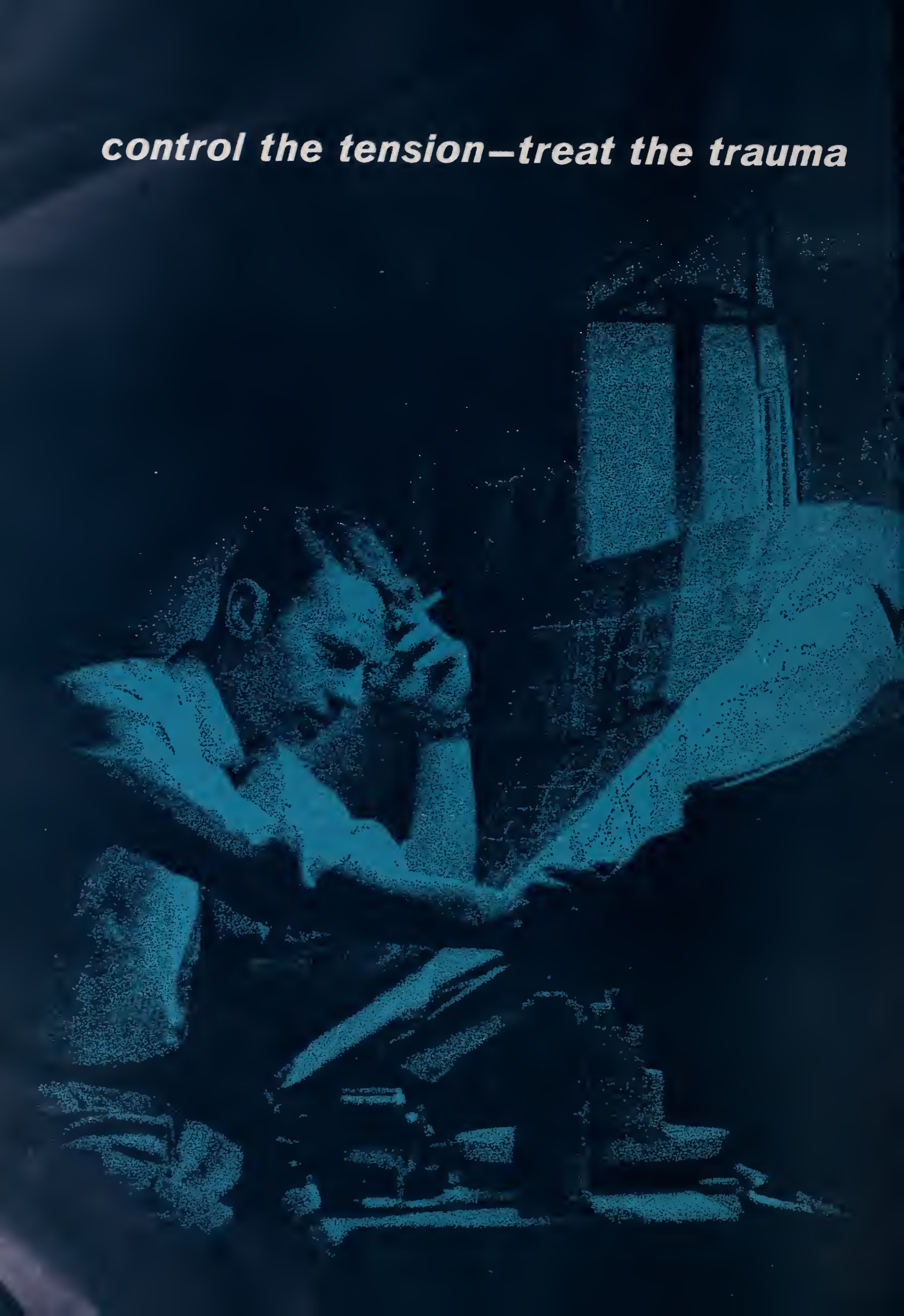
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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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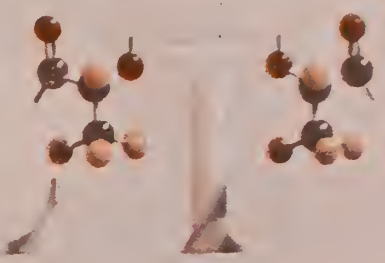
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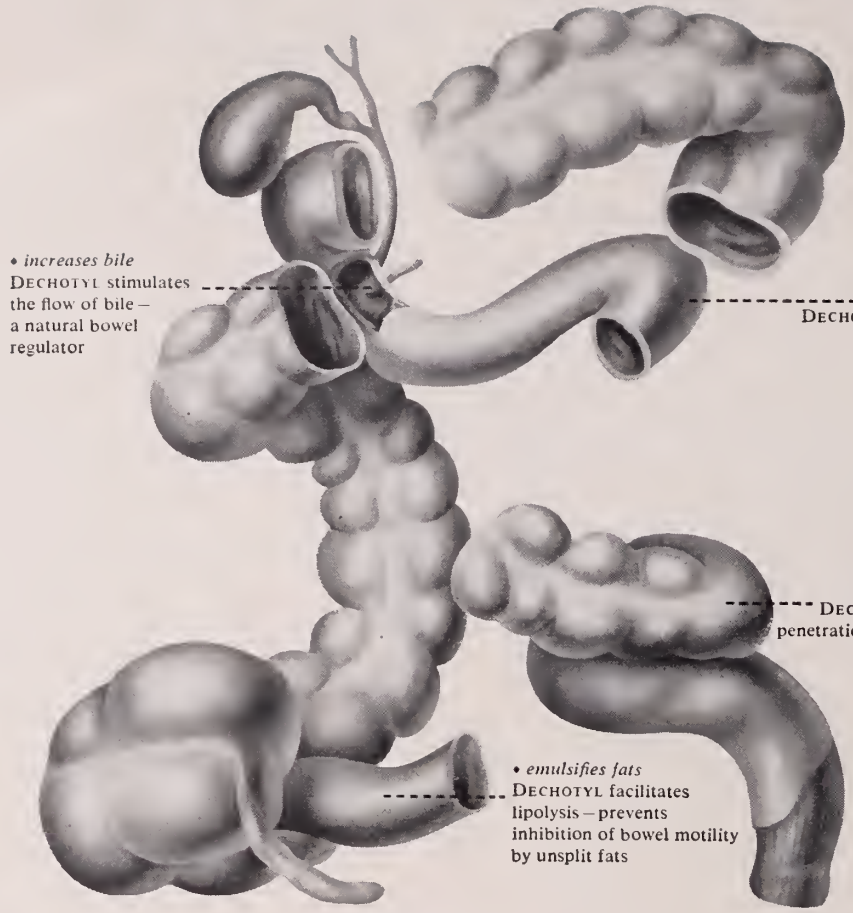
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well tolerated...gentle transition to normal bowel function



Recommended to help convert the patient—naturally and gradually—to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two TRABLETS at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* TRABLETS *3 or 4 times daily.*

Contraindications: Biliary tract obstruction; acute hepatitis.

DECHOTYL TRABLETS provide 200 mg. DECHOLIN,® (dehydrocholic acid, AMES), 50 mg. desoxycholic acid, and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow TRABLET. Bottles of 100.

*AMES T.M. for trapezoid-shaped tablet.

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

84160

to relieve itching, burning skin lesions
just press the button on the can

Schering

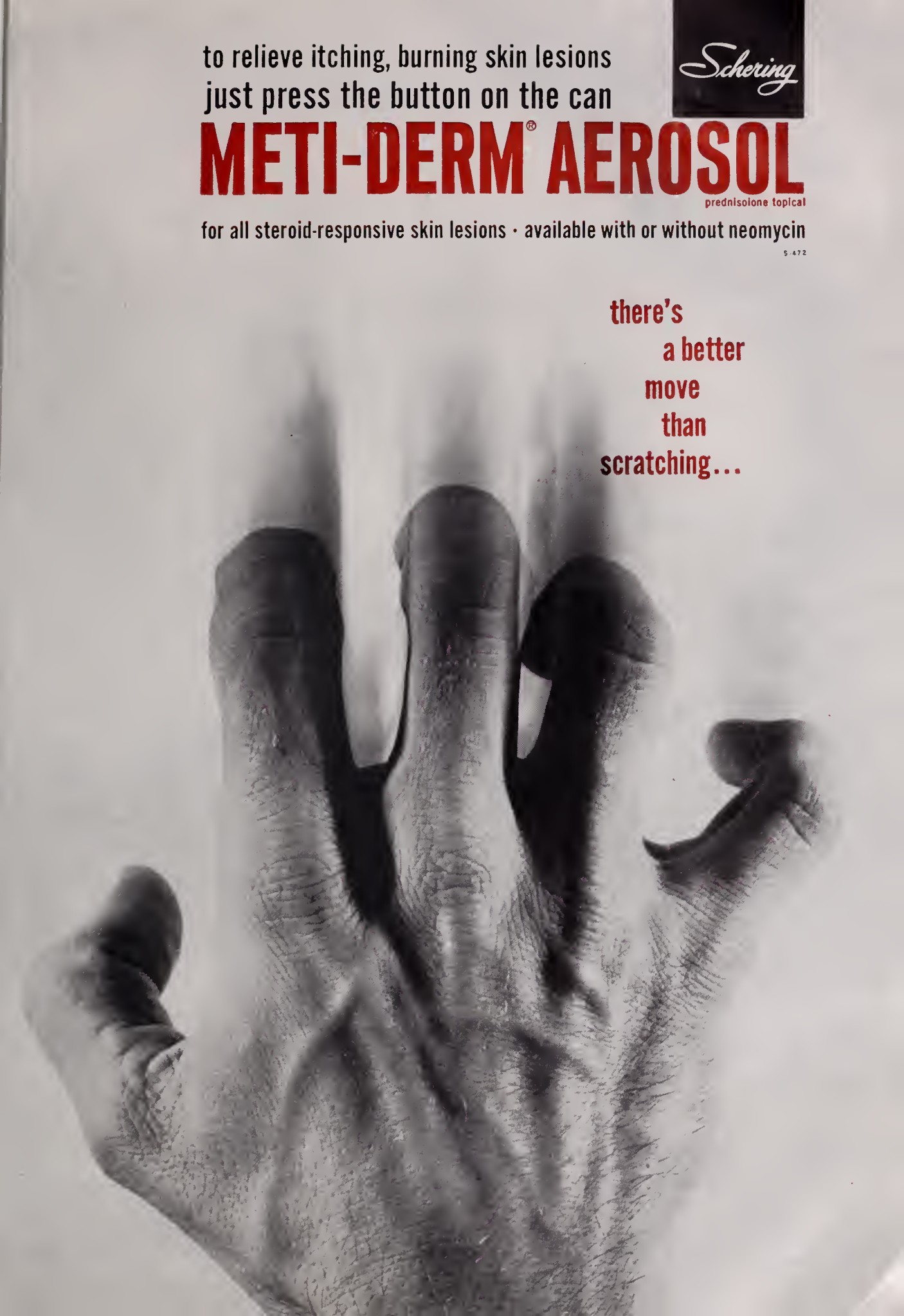
METI-DERM® AEROSOL

prednisolone topical

for all steroid-responsive skin lesions · available with or without neomycin

5-472

there's
a better
move
than
scratching...





when "Pollen Polly" rides the wind...

Triaminic®

...relief from pollen allergies

more complete than antihistamines alone... more thorough than nose drops or sprays

The miseries of respiratory allergy can be relieved so effectively with Triaminic.[1-5] Triaminic contains two antihistamines plus the decongestant, phenylpropanolamine, to help shrink the engorged capillaries, reduce congestion and bring relief from rhinorrhea and sinusitis.[1] Oral administration distributes medication to *all* respiratory membranes without risk of "nose drop addiction" or rebound congestion.[2,3]

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

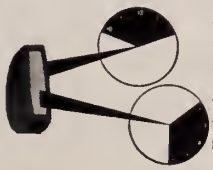
also available:

TRIAMINIC JUVELETS® ½ the formulation of the Triaminic Tablet with timed-release action.

TRIAMINIC SYRUP each teaspoonful (5 ml.) provides ¼ the formulation of the Triaminic Tablet.

References: 1. Fabricant, N. D.: E. E. N. T. Monthly 37:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Fuchs, M.; Bodi, T.; Mallen, S. R.; Hernando, L., and Moyer, J. H.: Antibiotic Med. & Clin. Ther. 7:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy 18:36 (Jan.) 1960.

Relief is prompt and prolonged because of this special timed-release action



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 more hours of relief

SMITH-DORSEY • A DIVISION OF THE WANDER COMPANY • LINCOLN, NEBRASKA

Squibb Announces Chemipen

Squibb Alpha-Phenoxyethyl Penicillin Potassium

new chemically improved penicillin which provides the highest blood levels that are obtainable with oral penicillin therapy



As a pioneer and leader in penicillin therapy for more than a decade, Squibb is pleased to make Chemipen, a new chemically improved oral penicillin, available for clinical use.

With Chemipen it becomes possible as well as convenient for the physician to achieve and maintain higher blood levels—with greater speed—than those produced with comparable therapeutic doses of potassium penicillin V. In fact, Chemipen is shown to have a 2:1 superiority in producing peak blood levels over potassium penicillin V.*

Extreme solubility may contribute to the higher blood levels that are so notable with Chemipen.* Equally notable is the remarkable resistance to acid decomposition (Chemipen is stable at 37°C. at pH 2 to pH 3), which in turn makes possible the convenience of oral treatment.

And the economy for your patients will be of particular interest—Chemipen costs no more than comparable penicillin V preparations.

Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

"CHEM-PEN" IS A SQUIBB TRADEMARK.

SQUIBB

Squibb Quality—the Priceless Ingredient

sulfa therapy suited to young tastes and tempers...



Employs the N^1 acetyl form of KYNEX to impart high palatability yet retain single-daily-dose effectiveness and rapid, high sustained action against sulfa-susceptible infections. **Dosage:** first day, 1 tsp. (250 mg) for each 20 lbs.; thereafter, ½ tsp. daily for each 20 lbs. For 80 lbs., use adult dosage of 4 tsp. (1.0 Gm.) initially; and 2 tsp. (0.5 Gm.) thereafter. Taken once a day—preferably after a meal. **Supplied:** Each tsp. (5 cc.) contains 250 mg. sulfamethoxypyridazine activity. Bottles of 4 and 16 fl. oz.

CHERRY LIQUID AND 1-DOSE-DAILY

KYNEX®

N^1 Acetyl Sulfamethoxypyridazine

ACETYL PEDIATRIC SUSPENSION

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



It's easy to "stick to" a diet when dishes in it look as good as this.

The secret of a successful "regularity" diet is acceptance

Bulky foods—*attractively served*—make the "regularity" diet acceptable to patients. Fruits are high in cellulose and appetite appeal served chilled in a compote dish. Boiled vegetables look inviting garnished with dill, parsley or other herbs. Oranges, apples, beets, carrots provide pectin which absorbs more fluid to form smooth bulk.

For extra appetite appeal, your patient can team apples with dates. Raisins or bright fresh cranberries make a tasty surprise in a rough milled oatmeal muffin which, with other whole grains, offer cellulose plus Vitamin B Complex. Remember, plenty of liquid is important to make the cellulose bulky—about 8 to 10 glasses every day.



With your approval, a glass of beer can add zest to a patient's diet. 8 oz. glass supplies about ⅛ the min. Niacin requirement and smaller amounts of other B Complex Vitamins. (Average of American Beers)

United States Brewers Foundation

If you'd like reprints of this and 11 other different diet menus for your patients, write United States Brewers Foundation, 535 Fifth Avenue, N.Y. 17, N.Y.



Beating too fast? Slow it down with SERPASIL®

(reserpine CIBA)

Serpasil has proved effective as a heart-slowing agent in the following conditions: mitral disease; myocardial infarction; cardiac arrhythmias; neurocirculatory asthenia; thyroid toxicosis; excitement and effort syndromes; cardiac neurosis; congestive failure. Serpasil should be used with caution in patients receiving digitalis and quinidine. It is not indicated in cases of aortic insufficiency.

SUPPLIED: Tablets, 0.1 mg., 0.25 mg. (scored) and 1 mg. (scored). Complete information available on request.

CIBA
SUMMIT·NEW JERSEY

3/2819MB

Sterazolidin®
brand of prednisone-phenylbutazone

a well balanced therapy in all forms of rheumatic disorder

for rapid, effective relief

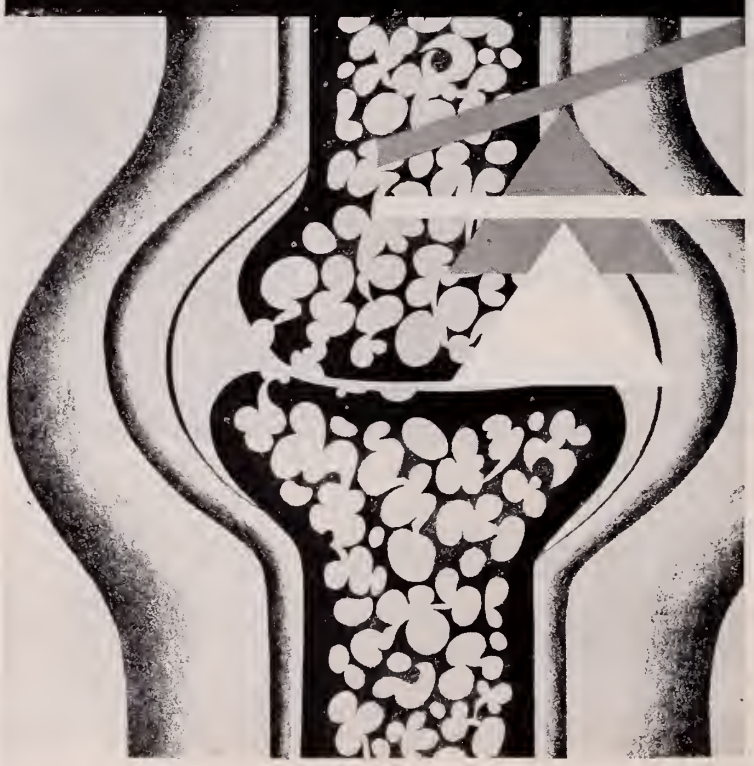
The combined action of phenylbutazone and prednisone in Sterazolidin results in striking therapeutic benefit with only moderate dosage of both active agents.

In long-term therapy of the major forms of arthritis, control is generally maintained indefinitely with stable uniform dosage safely below that likely to produce significant hypercortisonism.

In short-term therapy of more acute conditions Sterazolidin provides intensive anti-inflammatory action to assure early resolution and recovery.

Sterazolidin®, brand of prednisone-phenylbutazone: Each capsule contains prednisone, 1.25 mg.; Butazolidin® (brand of phenylbutazone), 50 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg. Bottles of 100.

Geigy, Ardsley, New York



Geigy

SZ 1-60

CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

In "escaping" rheumatoid arthritis. After gradually "escaping" the therapeutic effects of other steroids, a 52-year-old accountant with arthritis for five years was started on DECADRON, 1 mg./day. Ten months later, still on the same dosage of DECADRON, weight remains constant, she has lost no time from work, and has had no untoward effects. She is in clinical remission.*

New convenient b.l.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.l.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.l.d. or q.l.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

*From a clinical Investigator's report to Merck Sharp & Dohme.

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Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

MSD MERCK SHARP & DOHME • Division of Merck & Co., INC., West Point, Pa.



OPEN UP

THE SINUSES

BY DEEP DECONGESTION

Neo-Vadrin is the deep nasal decongestant that restores drainage and ventilation of all eight sinuses by opening up the obstructed ostia.

The therapeutic effect is both prompt and prolonged. Hence Neo-Vadrin is ideal for treatment of deep nasal and sinus congestion due to head colds, hay fever, vasomotor rhinitis, nasal allergy, and sinusitis.

In addition, Neo-Vadrin is antiseptic and locally anesthetic. May be used by patients of all ages.

dl-Norephedrine HCl	0.4%
Phenylephrine HCl	0.15%
Chlorobutanol	0.15%
Benzalkonium Chloride	0.005%

The more prolonged action of dl-norephedrine[1] combined with promptly effective phenylephrine[2] provides a long span of hours for more satisfactory therapeutic response.

Supplied in 1 fld. oz. dropper bottles with special nasal applicator and 3 4 oz. plastic spray bottles.

NEO-VADRIN

FOR NASOSINUSITIS

Samples are available to physicians upon request. Please make your request on your prescription sheet or letterhead.

[1] *Sollmann's Manual of Pharmacology*, 8th ed., 1957, p. 507.
[2] *Modern Drug Encyclopedia*, 7th ed., 1958, p. 757.

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Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica.* In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca,* is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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BRISTOL, TENNESSEE
NEW YORK • KANSAS CITY • SAN FRANCISCO


THIS IS
THE
TABLET



ALPEN is the oral penicillin that provides on a fasting stomach peak antibiotic blood levels approximately twice as high as oral potassium penicillin V... and significantly higher than I. M. penicillin G.

Some strains of staphylococci resistant to other penicillins exhibit in vitro sensitivity to potassium phenethicillin.

ALPEN has greater freedom from the G. I. sequelae (overgrowth of resistant flora) sometimes observed with broad spectrum -mycins.

ALPEN gives much higher antibiotic levels within the first hour of ingestion by the well-tolerated oral route.

WHEN TO USE ALPEN Recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci.

HOW TO USE ALPEN Depending on the severity of the infection, 125 mg. (200,000 units) or 250 mg. (400,000 units) three times daily may be used. In more severe or stubborn infections, a dosage of 500 mg. (800,000 units) t.i.d. may be employed. In beta hemolytic streptococcal infections, treatment should be continued for at least ten days.

PRECAUTIONS The usual precautions in the administration of oral penicillin should be observed. For further details see package literature.

Tablets: 125 mg. and 250 mg., bottles of 25 and 100. Powder for Oral Solution (lemon-lime flavored), 1.5 Gm. bottle (125 mg. per 5 cc. teaspoonful).

this is the tablet that gives higher peak antibiotic blood levels

HIGHER THAN I. M. PENICILLIN G
HIGHER THAN POTASSIUM PENICILLIN V

ALPEN

ALPEN™—potassium phenethicillin

Schering

now–for more comprehensive control of

'pain & spasm'



INDICATIONS

HEAD: temporomandibular muscle spasm • NECK: acute torticollis, osteoarthritis of cervical spine with spasm of cervical muscles, whiplash injury • TRUNK AND CHEST: costochondritis, intercostal myositis, spondylosis • BACK: acute and chronic lumbar strains and sprains, acute low back pain (otogenic), acute lumbar arthritis and traumatic injury, compression fracture, herniated intervertebral disc, pectoralis tendinitis, strained muscle(s) • EXTREMITIES: acute hip injury with muscle spasm, ankle sprain, arthritis (of foot or knee), blow to shin followed by muscle spasm, bursitis, spasm or strain of muscle or muscle group, old fracture with recurrent spasm, Pellegrini Stieda disease, tenosynovitis with associated pain and spasm

-pain due to
or associated with
-spasm of skeletal muscle

a new muscle relaxant-analgesic

Robaxisal

ROBAXIN® WITH ASPIRIN

Many conditions, painful in themselves, often give rise to spasm of skeletal muscles. ROBAXISAL, the new dual-acting muscle relaxant-analgesic, treats both the pain and the spasm with marked success: In clinical studies on 311 patients, 12 investigators[1] reported satisfactory results in 86.5%. Each ROBAXISAL Tablet contains:

- A relaxant component — Robaxin® — widely recognized for its prompt, long-lasting relief of painful skeletal muscle spasm, with unusual freedom from undesired side effects ..... 400 mg.
  Methocarbamol Robins U.S. Pat. No. 2770641
- An analgesic component — aspirin — whose pain-relieving effect is markedly enhanced by Robaxin and which has added value as an anti-inflammatory and anti-rheumatic agent ..... (5 gr.) 325 mg.

INDICATIONS: ROBAXISAL is indicated when analgesic as well as relaxant action is desired in the treatment of skeletal muscle spasm and severe concurrent pain. Typical conditions are disorders of the back, whiplash and other traumata, bursitis, fibrositis, and pain and spasm associated with arthritis.

SUPPLY: ROBAXISAL Tablets (pink and white, lacquered) in bottles of 100 and 500.

Also available: ROBAXIN Injectable, 1.0 Gm. in 10-cc. vials; pol. ROBAXIN Tablets, 0.5 Gm. (white, scored) in bottles of 50 and 500.

[1] Clinical reports in files of A. H. Robins Co., Inc., from J. Allen Madison, Wise; B. Billow, New York, N. Y.; B. Decker, Richmond, Va.; C. Freeman, Jr., Augusta, Ga.; R. B. Gordon, New York, N. Y.; J. E. Hornblad, Schenectady, N. Y.; L. Levy, New York, N. Y.; N. L. Rue, Chicago, Ill.; H. H. Nathan, Richmond, Va.; A. Poindexter, Los Angeles, Cal.; E. Rosen, Brooklyn, N. Y.; K. H. [illegible], Rockford, Ill.

Robins

Additional information available upon request

A. H. ROBINS CO., INC., Richmond 20, Virginia

Making today's medicines with integrity ... seeking tomorrow's with persistence

Recent JAMA editorial statement clarifies the current controversy about dietary fats

Excerpted from the March 12, 1960, issue of The Journal of The American Medical Association:

"It is accepted generally that specific alteration in the diet will lower the concentration of cholesterol in the blood. The most effective results to date have been achieved by increasing consumption of polyunsaturated fatty acids, particularly linoleic acid. However, indefinitive and conflicting information has left much to the imagination of some food processors. Some of the largest vegetable oil processors in the United States have implied in advertisements that the cholesterol level can be lowered merely by adding polyunsaturated fatty acids to the diet. This selling campaign has created confusion among lay people, making it increasingly important that the physician clarify for his patients the conditions under which changes in the diet will be effective.

The patient should understand that if he increases his consumption of polyunsaturated fatty acids without reducing his intake of other fats, little is gained save for additional calories which could lead to obesity. A particular regimen will be effective only if polyunsaturated fatty acids are responsible for an appreciable percentage of the total fat calories. That is, they must replace rather than supplement some of the saturated fats and oils already in the diet.

* * *

Some manufacturers cite the "iodine number" of a fat or oil as evidence of the unsaturated fatty acid content of their product. This number is not a reliable indicator of therapeutic value because it measures monounsaturated and polyunsaturated fatty-acid content at the same time. A monounsaturated acid, like oleic, takes up two iodine atoms but does not affect the cholesterol concentration of the blood. A polyunsaturated acid, like linoleic, takes up four iodine atoms. In a product containing large amounts of oleic acid and small amounts of linoleic acid, the iodine number is nearly the same as it would be for a product containing little oleic acid and a modest amount of linoleic acid. Cottonseed oil has an iodine number of 110 and corn oil a number of 127; yet they each have about the same amount of linoleic acid.

* * *

Low-fat diets will not reduce the concentration of circulating cholesterol and lipoproteins as effectively as will diets containing an adequate percentage of polyunsaturated fatty acids. Weight-reduction regimens are basically low in fat, and if a lowered cholesterol level is necessary, planning must be done to maintain the proper ratio of saturated to unsaturated fats."

* * *

Herbert Pollack, M.D.
Associate Professor of Clinical Medicine
Postgraduate Medical School
New York University, New York

Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regime



Lean Beef Tips Veronique an example of glorious eating from Wesson

Wesson is unsurpassed by any readily available brand

WESSON'S IMPORTANT CONSTITUENTS

Wesson is 100% cottonseed oil–winterized and of selected quality

Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytosterol (predominantly beta sitosterol)	0.3-0.5%
Total tocopherols	0.09-0.12%

Never hydrogenated—completely salt free

Each pint of Wesson contains 437-524 Int. Units of Vitamin E

FREE Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N, 210 Baronne St., New Orleans 12, La.

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anorectic-ataractic

A logical combination for appetite suppression

meprobamate **plus** d-amphetamine...suppresses appetite...elevates mood... reduces tension...**without** insomnia, overstimulation or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

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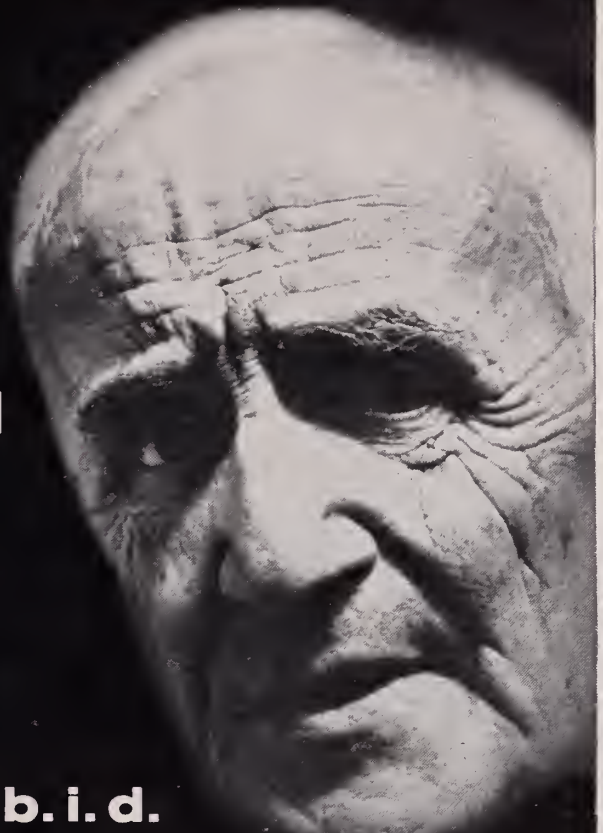
IN SENILE CONFUSION . . .

CONTINUOUS CEREBRAL OXYGENATION

WITH

ONE

Geroniazol TT* b.i.d.



- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio

IN HYPERTENSION

BLOOD PRESSURE COMES DOWN **smoothly** [1,2].

with spaced-release

Rau-Vertin IMPROVED

Rau-Vertin Improved is an "effective and easily administered antihypertensive drug," with a "low incidence of side reactions."[1]

PROVIDES: 1. Immediate sustained and smooth hypotensive action

2. Gradual release of Veratrum, reserpine and rescinnamine avoiding peaks and valleys of blood pressure often experienced with single ingredient hypotensives in standard dosage form.

3. Spaced Absorption virtually eliminating side effects, such as nausea, vomiting, or other gastric disturbances.

Composition: Each spaced release tablet contains—Reserpine 0.225 mg., Rescinnamine 0.075 mg., Veratrum Viride Ester Alkaloids equivalent to 1.5 mg. of house standard.

Dosage: 1 tablet twice a day, after the morning and evening meal. Initially, an occasional patient may show some sensitivity to this regimen; if so, reduce the dose to one tablet per day for several days and then resume two tablets daily.

How Supplied: Bottles of 100 pink tablets.

References: 1. Asbell, N. and Tanyol, H.: The Use in Older Patients of an Antihypertensive Compound Incorporating Rauwolfia and Veratrum in Spaced-Release Form, Proceedings of the Symposium on Hypertension of the Richmond Academy of General Practice, Richmond, Virginia, October 20, 1959, p. 15. 2. Raines, D.S.: Clinical Experience with Spaced-Release Combination of Rauwolfia and Veratrum Alkaloids, ibid., p. 35.

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RA-2808/60

TRADEMARK: RAU-VERTIN

In response to innumerable requests from dermatologists

Winthrop Laboratories now makes available

TRIQUIN®

FOR LUPUS ERYTHEMATOSUS AND LIGHT-SENSITIVITY ERUPTIONS

WHAT IT IS:

A combination of Atabrine® hydrochloride 25 mg., Aralen® phosphate 65 mg. and Plaquenil® sulfate 50 mg.

WHAT IT'S FOR:

Treatment of lupus erythematosus (chronic discoid type) and polymorphic light eruptions (light-sensitivity eruptions, solar urticaria or dermatitis).

HOW IT ACTS:

Each of the three components produces beneficial response in lupus erythematosus and light-sensitivity eruptions. Since the dose of each of the Triquin components is very low, overall toxicity is reduced and clinical tolerance improved. Furthermore, the three components appear to act synergistically.

HOW SUPPLIED:

Triquin tablets in bottles of 100, sold on prescription only.

Write for TRIQUIN booklet.



DOSAGE:

Lupus. Average initial adult dose, 1 or 2 tablets after meals and at bedtime. Dosage should be reduced gradually at two week intervals to 1 or 2 daily.

Light-Sensitivity Eruptions. Average initial adult dose, 1 tablet after breakfast and lunch. May be reduced after several weeks to maintenance dosage of 1 tablet daily.

Triquin, Atabrine (brand of quinacrine), Aralen (brand of chloroquine), and Plaquenil (brand of hydroxychloroquine), trademarks reg. U. S. Pat. Off.

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meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

meprobamate **plus** d-amphetamine... depresses appetite...elevates mood... eases tensions of dieting...**without** over-stimulation, insomnia or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

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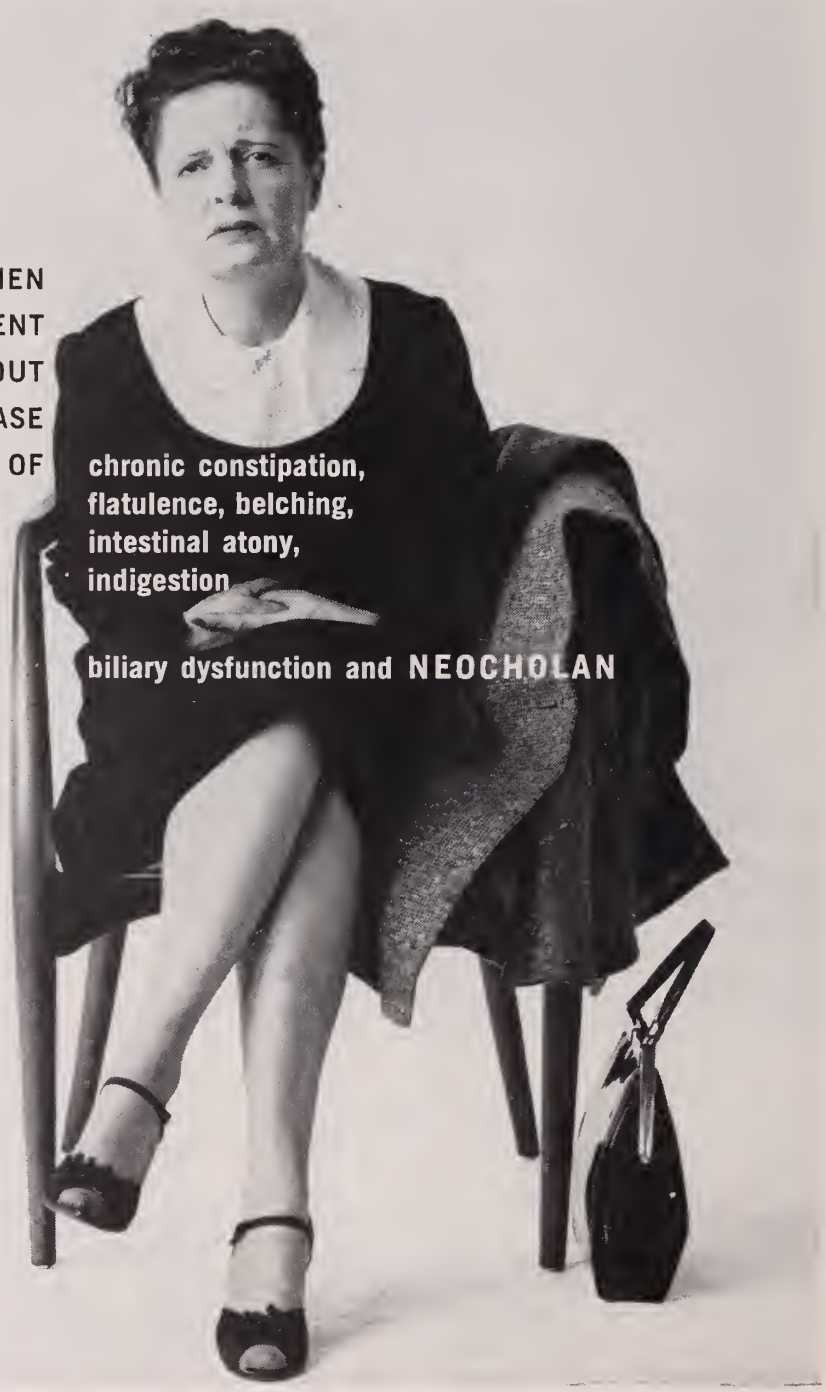
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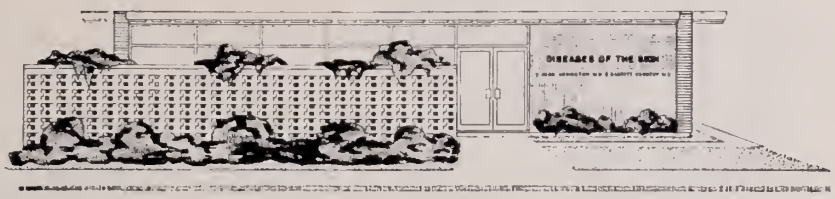
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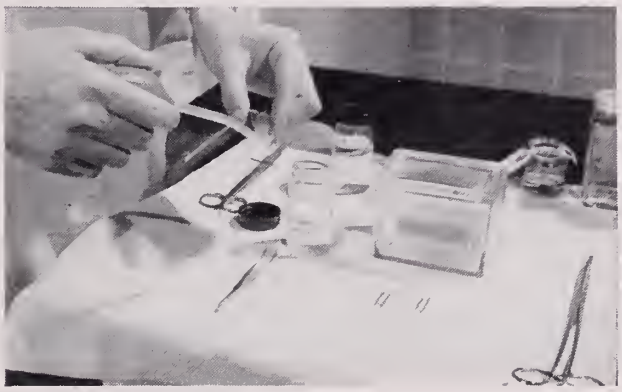
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Reproduced below is the official list of reportable diseases for the State of Louisiana. Group 1 is the usual reportable diseases. This group is subdivided into Bacterial, Viral, Rickettsial, Protozoan, Parasitic, Venereal and Other. In this last sub-group "Other" are Cancer and Occupational Diseases. Although these are not rightly classified as communicable diseases, reports are required purely for statistical purposes. In Group 2 is a listing of the uncommon diseases which, if they occur, are of serious nature and epidemiological importance—such as Cholera, Plague, Malaria, Yellow Fever, etc. Group 3 consists of a list of those diseases which need not be reported individually or when seen in small numbers. Group 3 diseases should only be reported when seen in unusual numbers and then only by the number of cases seen, not by individual name. Group 4 consists of a single disease, i.e., Rabies in Animals, and this should be reported only following laboratory confirmation.

All reports of communicable diseases by the private physician to the State Board of Health are considered confidential information. The occurrence of any of the following diseases should be reported on Form PHS-2430 to your Local Health Unit or, if you prefer, a telephone call to the Unit will suffice. Supplies of these forms for use in confidential case reoprting may be obtained from the Health Unit in your parish or from the State Board of Health, State Office Building, 325 Loyola Avenue, New Orleans.

REPORTABLE DISEASES

GROUP 1—**BACTERIAL**

1. Brucellosis (Undulant Fever)
2. Diphtheria
3. Meningococcal Meningitis and Meningococcemia
4. Salmonellosis (includes Paratyphoid and all other Salmonella)
5. Pertussis (Whooping Cough)
6. Rheumatic Fever
7. Shigellosis
8. Streptococcal Sore Throat (includes Scarlet Fever
9. Tetanus
10. Tuberculosis—Pulmonary
11. Tuberculosis—Other Types (Specify)
12. Tularemia
13. Typhoid Fever

VIRUS

14. Infectious Encephalitis (Primary Virus Mosquito-borne)
15. Infectious Hepatitis (includes Serum Hepatitis)
16. Measles
17. Poliomyelitis—Paralytic
18. Poliomyelitis—Non-Paralytic
19. Rabies in Man

RICKETTSIAL

20. Rocky Mountain Spotted Fever
21. Typhus Fever (Endemic)

PROTOZOAN

22. Amebiasis

PARASITIC

23. Trichinosis

VENEREAL

24. Chancroid
25. Gonorrhea
26. Granuloma Inguinale
27. Lymphopathia Venerenm
28. Ophthalmia Neonatorinm (Gonorrheal Ophthalmia)
29. Syphilis

OTHER

30. Cancer
31. Occupational Diseases (Classify by Cause) (Report Dermatoses only if two or more cases)

GROUP 2—**ANY case of UNCOMMON DISEASE**

32. Actinomycosis
33. Anthrax
34. Botulism
35. Cholera
36. Dengue
37. Glanders
38. Histoplasmosis
39. Leprosy
40. Leptospirosis (includes Weil's Disease)
41. Malaria
42. Plague
43. Psittacosis
44. Q. Fever
45. Rat-Bite Fever
46. Relapsing Fever
47. Smallpox
48. Toxoplasmosis
49. Trachoma
50. Typhus Fever (Epidemic)
51. Yellow Fever

GROUP 3—**Report when occurring in UNUSUAL NUMBERS (Need not be reported individually by name)**

52. Ascariasis
53. Chickenpox
54. Conjunctivitis, acute infectious (pink eye)
55. Diarrhea of new born (epidemic)—if 2 or more cases
56. Food Poisoning
57. German Measles
58. Hookworm
59. Impetigo Contagiosa
60. Influenza
61. Mumps
62. Ringworm of the Scalp
63. Scabies

GROUP 4—**Reportable only by Laboratory Examination**

64. Rabies in Animals

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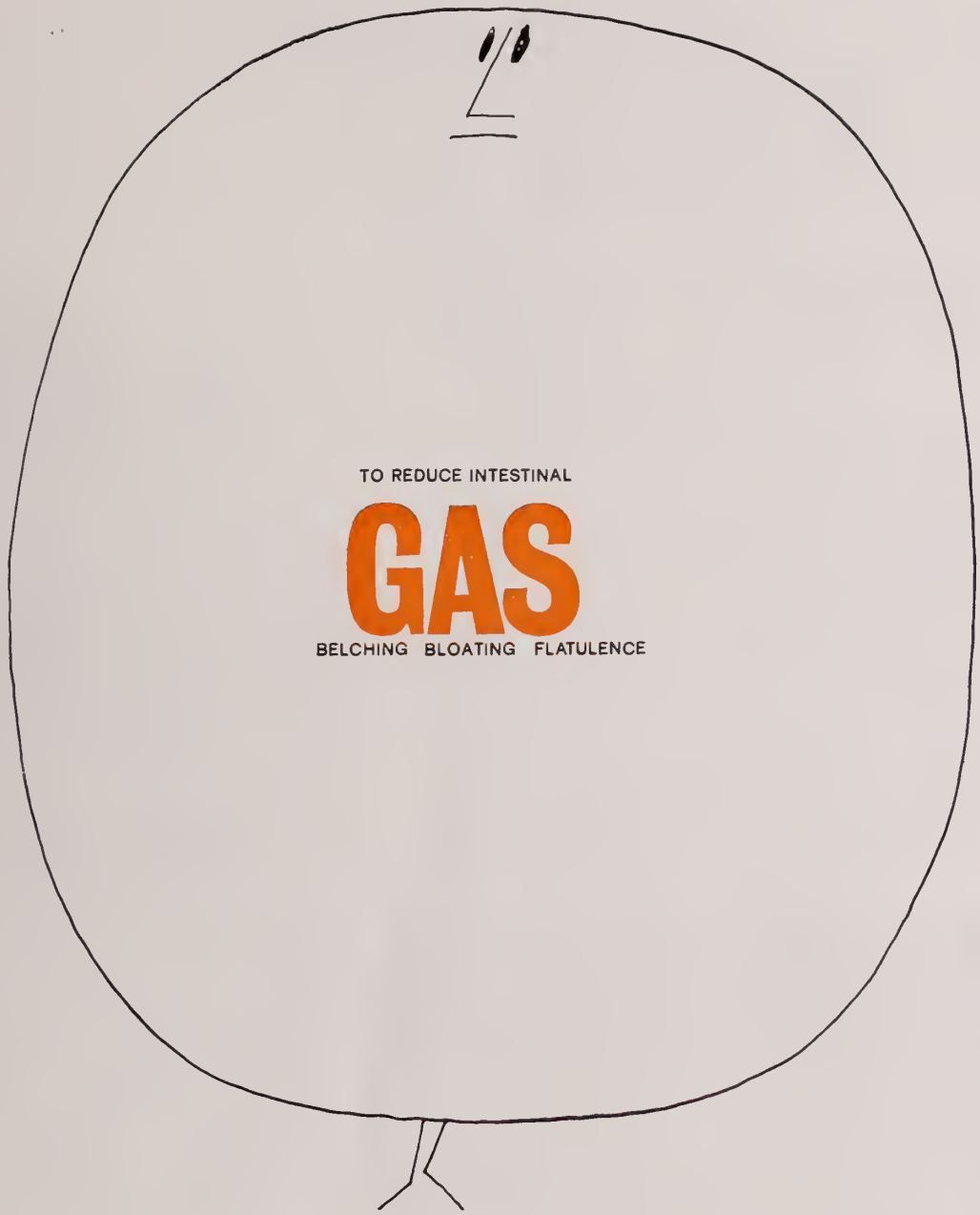
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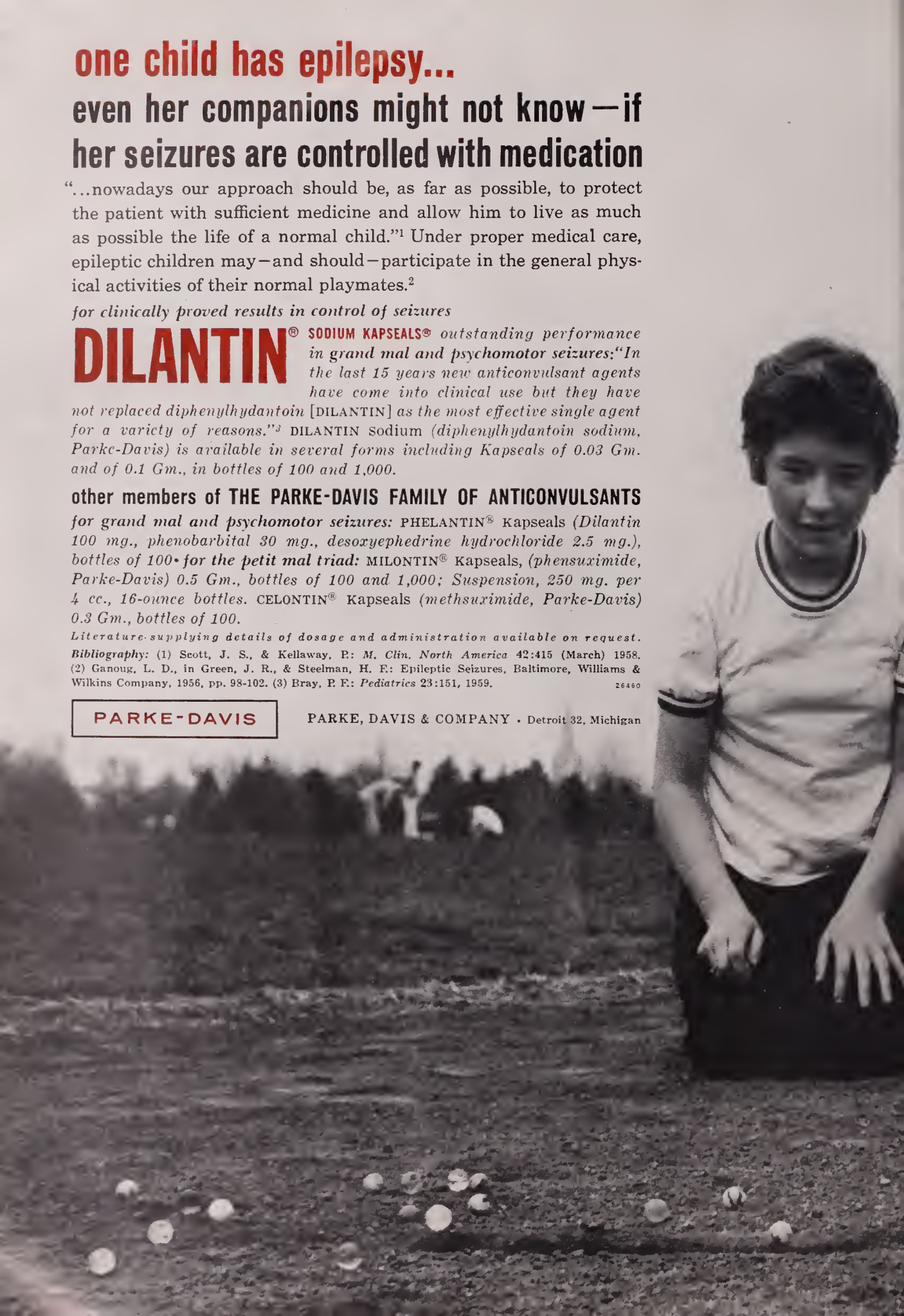
Literature supplying details of dosage and administration available on request.

Bibliography: (1) Scott, J. S., & Kellaway, P.: *M. Clin. North America* 42:415 (March) 1958. (2) Ganoug, L. D., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, pp. 98-102. (3) Bray, P. F.: *Pediatrics* 23:151, 1959.

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1. Projection from Vital Statistics, U.S. Government Dept. HEW, Vol. 48, No. 14, 1958, p. 398.
2. Modell, W.: Drugs of Choice 1958-1959, St. Louis, C. V. Mosby Company, 1958, p. 347.

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Gruenberg[3] prescribed Trancopal for 70 patients with low back pain and observed that it brought marked improvement to all. "In addition to relieving spasm and pain, with subsequent improvement in movement and function, Trancopal reduced restlessness and irritability in a number of patients."[3] In another series, Kearney[4] reported that Trancopal produced relief in 181 of 193 patients suffering from low back pain and other forms of musculoskeletal spasm.

Trancopal enables the anxious patient to work or play. According to Gruenberg, "In addition to relieving muscle spasm in a variety of musculoskeletal and neurologic conditions, Trancopal also exerts a marked tranquilizing action in anxiety and tension states."[3] Kearney[4] found "... that Trancopal is the most effective oral skeletal muscle relaxant and mild tranquilizer currently available."

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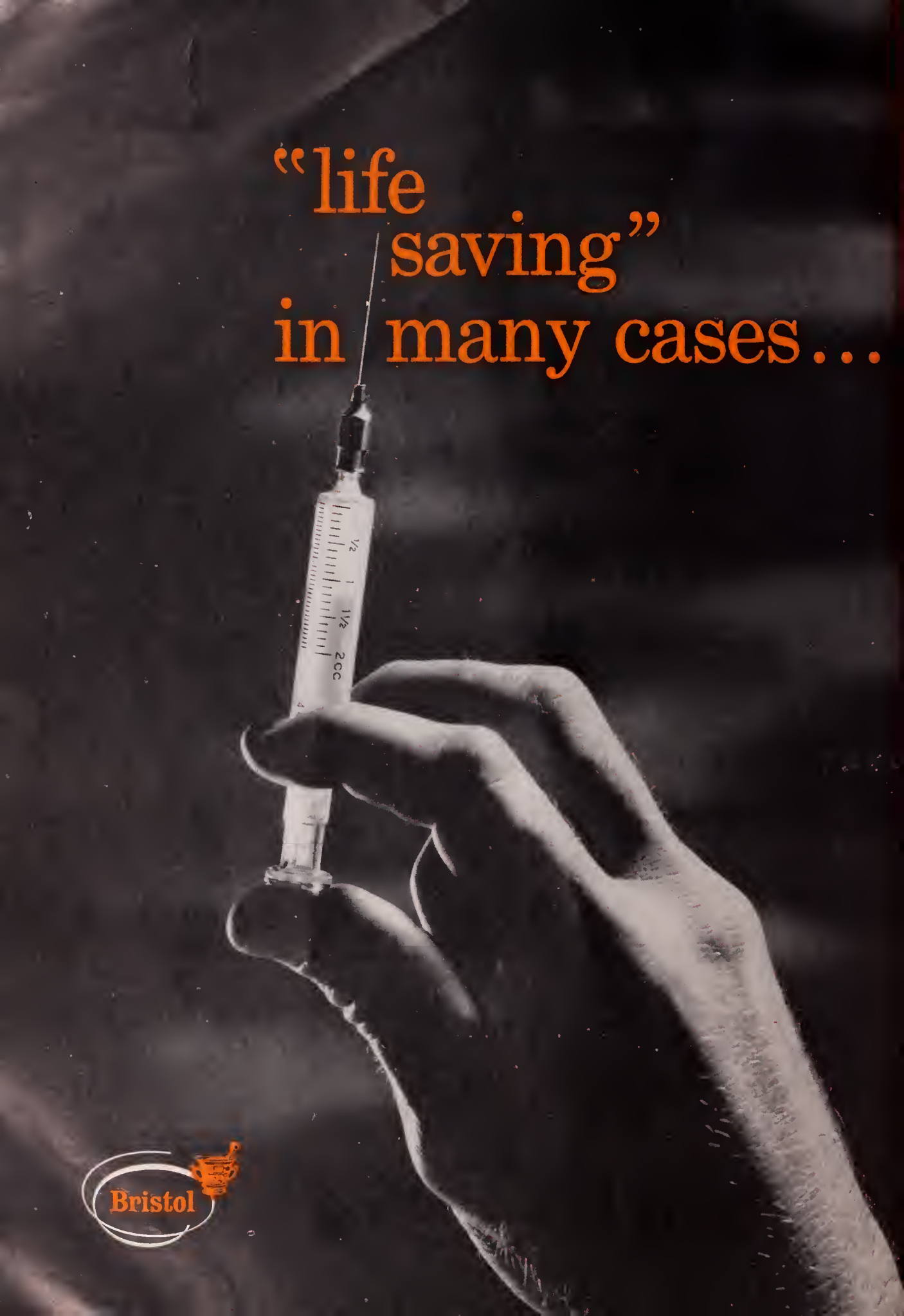
Dosage: Adults, 200 or 100 mg. orally three or four times daily. Relief of symptoms occurs in from fifteen to thirty minutes and lasts from four to six hours.

References: *1.* Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. *2.* Lichtman, A. L.: Scientific Exhibit, Internat. Coll. Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. *3.* Gruenberg, Friedrich: *Current Therap. Res.* 2:1, Jan., 1960. *4.* Kearney, R. D.: *Current Therap. Res.* 2:127, April. 1960.

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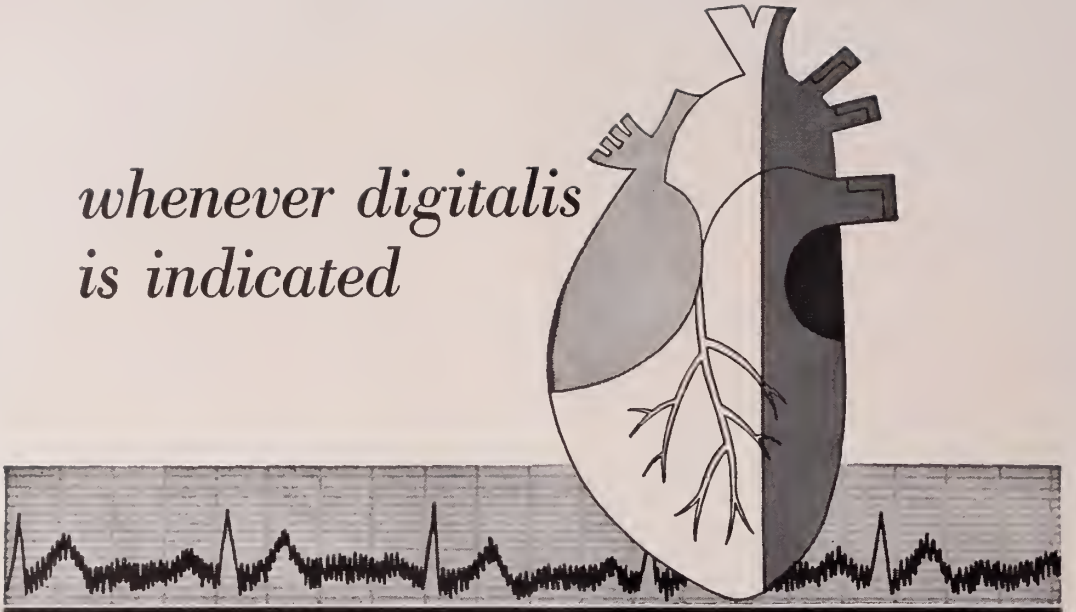
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REFERENCES: 1. Yow, E. M.: Practitioner 182:759, 1959. 2. Yow, M. D., and Womack, G. K.: Ann. N. Y. Acad. Sci. 76:363, 1958. 3. Bunn, P. A., Baltch, A., and Krajnyak, O.: Ibid. 76:109, 1958. 4. Council on Drugs, J. A. M. A. 172:699, 1960.

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Lown, B., and Levine, S. A.: Current Concepts in Digitalis Therapy, Boston, Little, Brown & Company, 1954, p. 23, par. 2.

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Total Body Perfusion For Unresectable Malignancy

• A report on 14 patients on whom this new method of therapy was employed.

ALBERT L. RAYBURN, M.D.
SALEM F. SAYEGH, M.D.
WILLIAM H. KASTL, M.D.
LOUIS F. KNOEPP, M.D.*
Alexandria

RECENT interest has been shown in perfusion of carcinoma patients with cancericidal drugs in high dosage by using an extracorporeal machine. Most of the applications are for regional perfusion where the tumor-bearing area can be isolated from the general circulation and thereby limiting the toxic action of the drugs to the area thus isolated. A few patients in whom generalized lesions were manifested have been subjected to total body perfusion. The advantage of such perfusion over ordinary intravenous or oral administration might possibly enhance the effectiveness of the chemotherapeutic drug by (1) its intra-arterial administration, (2) higher doses of the drug administered, and (3) increased arterial oxygen saturation by the pump oxygenator.

Material

A group of 14 patients were selected for total body perfusion utilizing nitrogen mustard in twice the normal therapeutic dose. All patients selected for this study were determined to be unresectable surgically. A few were subjected to concomittant deep radiation or supplemental chemotherapy by other agents. Any patient who had a surgical resection demonstrated some unresectable tumor. Bone marrow was not withdrawn or replaced in any of these patients, and none showed severe bone marrow depression, contrary to expectations.

Method

The pump oxygenator was primed with 500 cubic centimeters of fresh heparinized blood using the Hymen† disposable oxygenator. The aorta and inferior vena cava were cannulated in a retrograde fashion from the femoral vessels under local anesthesia and catheters were placed well up into the thorax. The drug (usually 0.8 mg kilogram body weight) was administered into the arterial line and the pump circulated with high oxygenation for at least thirty minutes.

No patient experienced any ill effects

* From the Veterans Administration Hospital, Alexandria, Louisiana.

† Courtesy of Abbott Laboratories, North Chicago, Illinois.

TABLE 1
TOTAL BODY PERFUSIONS

Case	Age Race	Lesion	Date Admitted	Date Perfused	HN_2 Courses	High Dose	Other Treatment	Survival	Remarks
B. S. A 836	56W	Oat cell lung	12-12-58	11-25-59	1x	0.8 mg/K	Resection* Azaserine x 4	Alive	
L. W. A 365	63W	Squamous lung	2-10-59	7-29-59	3x	0.8 mg/K	None	Dead 6.0 mo.	
E. C. A 672	66C	Oat cell lung	3-20-59	9- 1-59	3x	0.8 mg/K	Azaserine x 4	Dead 11.0 mo.	
E. O. R. A 918	63W	Squamous lung	4-20-59	8-14-59 9-12-59	4x	0.8 mg/K	None	Dead 11.0 mo.	
J. K. A 1011	66W	Squamous lung	4-23-59	8-27-59	3x	0.8 mg/K	None	Dead 6.0 mo.	Cerebral accident
H. S. A 1197	41C	Squamous lung	5-20-59	8-19-59 10-16-59	3x	0.9 mg/K	None	Dead 9.0 mo.	
F. C. A 1598	53C	Oat cell lung	7-10-59	8- 3-59	2x	0.8 mg/K	None	Dead 2.0 mo.	
J. G. A 1736	64W	Squamous lung	7-28-59	8-26-59	2x	0.8 mg/K	None	Dead 7.0 mo.	
W. H. A 2523	62W	Oat cell lung	11-19-59	12-29-59	1x	0.8 mg/K	Azaserine x ½	Dead 2.4 mo.	
L. C. A 2683	66W	Squamous lung	12-16-59	1-11-60	2x	0.8 mg/K	None	Dead 4.0 mo.	
W. H. A 817	70C	Undiff. lung	12- 8-59	1-12-60	1x	0.8 mg/K	None	Dead 1.5 mo.	Fibrillation
C. P. A 1654	64W	Esophagus	7-20-59	10-21-59	2x	0.8 mg/K	x-ray therapy	Alive	
D. C. A 2140	65W	Esophagus	9-23-59	1- 6-60	1x	0.8 mg/K	Resection	Dead 5.0 mo.	
L. D. A 2406	45W	Adrenal	11-10-59	1-26-60	2x	0.8 mg/K	x-ray therapy	Dead 5.0 mo.	

* All resections were palliative,

TABLE 2
INTRAVENOUS NITROGEN MUSTARD

Case	Age Race	Lesion	Date Admitted	HN_2 Courses	High Dose	Other Treatment	Survival
J. M. 83596	65C	AdenoCA lung	4- 2-57	3x	0.6 mg/K	None	Dead 5.7 mo.
J. P. 84228	47W	AdenoCA lung	6-10-57	4x	0.45 mg/K	Resection*	Dead 15.3 mo.
E. T. 87124	57W	Squamous lung	9-19-57	1x	0.4 mg/K	None	Dead 10.0 mo.
H. S. 85305	34W	AdenoCA lung	10- 8-57	2x	0.4 mg/K	None	Dead 3.5 mo.
J. C. K. 86332	64W	Squamous lung	2- 7-58	1x	0.6 mg/K	None	Dead 4.5 mo.
D. F. 86758	62W	Squamous lung	3-25-58	9x	0.9 mg/K	None	Dead 17.0 mo.
F. J. 86798	67C	Squamous lung	3-28-58	1x	0.4 mg/K	None	Dead 5.0 mo.
O. P. 87024	67C	AdenoCA lung	4-22-58	1x	0.4 mg/K	None	Dead 2.0 mo.
L. G. 88965	52W	Squamous lung	11- 1-58	3x	0.4 mg/K	None	Dead 10.0 mo.
L. D. A 330	42W	Squamous lung	2- 6-59	1x	0.2 mg/K	None	Dead 1.0 mo.
D. A. A 694	45W	Oat cell lung	3-23-59	1x	0.8 mg/K	None	Dead 1.0 mo.
A. C. A 1244	65W	Squamous lung	5-27-59	2x	0.8 mg/K	Resection*	Dead 4.0 mo.
P. S. A 2511	63C	AdenoCA lung	11-17-59	1x	0.4 mg/K	None	Dead 2.0 mo.
W. J. A 2857	72C	Squamous lung	1-17-60	3x	1.0 mg/K	Resection*	Alive

* Resection palliative in all cases.

with this technic. At the termination, at least 400 cubic centimeters of the pump blood with any remaining drug activity was allowed to be retained by the patient, increasing his blood volume by this amount. Catheters were then withdrawn and the femoral vessels repaired by common vascular suturing technics.

Of the 14 patients perfused, 11 were bronchogenic carcinomas and two of these were perfused twice. Oat cell carcinomas usually received follow-up courses of azaserine as well, since the effects of nitrogen mustard have not been too promising in this type of growth (Table I). All perfused patients usually received subsequent courses of intravenous nitrogen mustard every four to six weeks through survival. The dose of the drug was increased to tolerance levels and reached as high as 1.0 mg/kilogram body weight in one patient without toxic side effects. All patients had hemograms taken at regular intervals after completion of a course and no patient required treatment for marrow depression. Most of the patients thus treated showed immediate symptomatic relief of pain.

Results

The perfused group of bronchogenic tumors was compared with a group of similar cases treated with nitrogen mustard by the conventional intravenous route (Table 2). Of these 14 control cases, the longevity averaged 6.0 months. This compares with the survival of 6.0 months average in the perfused group.

Summary

A group of 14 cases of unresectable tumors were subjected to total body perfusion with nitrogen mustard. Eleven of these were bronchogenic carcinomas.

The survival of this group is compared with a similar series of bronchogenic carcinoma patients receiving nitrogen mustard intravenously.

Reference

Ryan, F. F.; Winblad, J. N.; Krementz, E. T.; and Creech, O.: Treatment of Malignant Neoplasms with Chemotherapeutic Agents Utilizing a Pump Oxygenator. Tulane Bulletin 17:133, (Feb.) 1958.

Weight of Californian and Australian Babies

Is it a general fact that children are larger at birth in newly settled countries than in older countries? We have no doubt of it in regard to California. It was long ago observed that the new States in the Mississippi valley produced a larger race of men than the old Atlantic States. * * * Twenty and thirty years ago the average weight of California babies was over eight pounds, and we are not certain that it has diminished. Infants weighing ten and eleven pounds have fallen into the hands of every accoucheur of moderate practice. Twelve and thirteen pounds is not a very uncommon weight, and a case of eighteen pounds is on record, well authenticated. It would seem that Australia is not behind in this respect. The **Australian Medical Journal** for September 1879, contains a list of 182 births which occurred in the Melbourne Hospital in the first four months of this year, the maximum weight being 12½ pounds, and the average about 8 pounds. As the births were in a hospital, and one-half were illegitimate, it may be presumed that the circumstances were not the most favorable to physical development.

Quoted from Pacific M. & S. J., Nov. 1879, in New Orleans M. & S. J. 7:825 (Feb) 1880.

Steroid Therapy as a Life-Saving Measure In Fulminating Pulmonary Tuberculosis

• Although, at first, it was believed that the adrenal steroids were harmful in tuberculosis, opinion has changed. The authors particularly emphasize the life saving effects in patients with severe, fulminating pulmonary disease which has proved to be unresponsive to chemotherapy.

HOWARD A. BUECHNER, M.D.
JORDAN THOMPSON, M.D.
New Orleans

JUST eleven years ago last August the remarkable hormones of the adrenal cortex entered clinical use. Their value in the treatment of such disorders as rheumatoid arthritis, the collagen diseases and allergic illnesses was quickly established, and in rapid succession they were tried in a great variety of other conditions, including tuberculosis.[1] Almost at once it was recognized that these hormones exerted a detrimental effect upon tuberculosis,[2-3] and their use in this field became a great taboo.[4]

But little by little the pendulum has swung back—as early as 1951 [5] and 1952,[6] the adrenal steroids were used, along with standard antituberculous drugs, in the treatment of tuberculous meningitis, and the value of this therapy has since become well recognized,[7] particularly in the management of patients with markedly elevated cerebrospinal fluid pressure and cerebrospinal block.[8]

Indications for Use

Physicians have approached the treatment of other forms of tuberculosis with adrenal steroids in a somewhat more cautious manner, but these hormones have now been used in many situations:

1. In the treatment of critically ill patients with marked toxicity;[9]
2. Where progressive tuberculosis is present despite standard chemotherapy;[10]
3. In patients with chronically active tuberculosis which no longer responds to antimicrobial agents;[11]
4. Where hypersensitivity to one or more antituberculous drugs exists;[12]
5. In the presence of specific adrenocortical insufficiency;[11]
6. In cases where steroids are needed to treat a co-existing disease;[11]
7. In miliary tuberculosis;[11]
8. Lymph node tuberculosis;[11]
9. Tuberculous pleural effusions; [13-15]
10. Tuberculous pericarditis;[16, 17]
11. And most recently, in ordinary uncomplicated pulmonary tuberculosis.[18-19]

In all of these situations, when the steroids have been combined with effective chemotherapy, they have not only had no detrimental effect but have actually proved beneficial in almost every instance, and the fear associated with their use in patients with tuberculosis has gradually been dissipated.

Perhaps the most interesting and most important use of these hormones is in the treatment of the more ordinary uncomplicated forms of pulmonary tuberculosis. Several recent studies have indicated that steroid therapy might be of considerable benefit in situations of this kind.

In a controlled study by the Research Committee of the Tuberculosis Society of Scotland,[18] 90 patients with comparable disease were divided into two groups. One

From the Medical Service, Veterans Administration Hospital, New Orleans, Louisiana, and the Department of Medicine, The Tulane University of Louisiana School of Medicine, New Orleans, Louisiana.

group received steroids plus chemotherapy and the other group received chemotherapy alone. The steroid treated group showed more rapid clinical and roentgenographic improvement of a degree which was considered to be statistically significant. Sputum conversion and cavity closure was also slightly better in the steroid group.

Weinstein and Koler [19] conducted a similar study in which they randomly assigned 100 consecutive patients to a strict double blind program of treatment, consisting of chemotherapy plus prednisolone versus chemotherapy plus a placebo. The following observations were made:

1. "No significant detrimental effects attributable to the steroids were noted."
2. "Highly significant acceleration of roentgenographic clearing was observed in the (steroid) treated group, particularly in those with far advanced disease."
3. "Reversal of infectiousness occurred in a significantly higher percentage of the (steroid) treated patients."
4. A higher percentage of cavity closure (75 per cent) was also seen in the steroid group to a degree which was considered to be "highly significant statistically," as compared to only 55 per cent cavity closure in the group which did not receive steroids. Of those cavities which persisted, in patients receiving prednisolone 87 per cent attained an "open-negative" status while only 25 per cent of the control cases reached the "open-negative" state.

The authors concluded that "the findings in this study suggest that there may be significant benefit to be derived from combined steroid - antituberculous drug therapy in pulmonary tuberculosis, particularly for far-advanced cavitary disease.

Another extremely important and no less interesting effect of corticosteroids is their apparent ability to exert a life-saving effect characterized by dramatic, almost unbelievably prompt, clinical improvement and relief of toxicity in virtually moribund patients with fulminating tuberculosis. With the institution of steroid therapy, rapid roentgenographic clearing and sputum conversion is also seen in these patients in spite of the fact that their severe, progressive pulmonary tuberculosis had previously exhibited little or no response to intensive and varied treatment with antituberculous drugs. The authors have observed this effect in a series of 12 patients and are convinced that the corticosteroids have been truly life-saving in at least some of these cases. Remarkable improvement has been observed even in the face of clinical and laboratory bacterial resistance to the chemotherapeutic agents being used; thus seeming to indicate that hormone therapy may apparently be employed with safety and benefit even when "effective chemotherapy" is not available.

Case Reports

The following illustrative cases are presented.

Case No. 1—M.J.R., a 39-year-old employee of the Department of Sanitation, was admitted to the hospital on January 21, 1956, with a history of a chronic cough and occasional hemoptysis of two years' duration. During the two months prior to admission, he had lost 25 pounds of weight. An x-ray of the chest (Fig. 1) disclosed very extensive, mottled, areas of infiltration symmetrically



Figure 1.—(Case 1). Admission chest x-ray, showing extensive bilateral pulmonary tuberculosis.

distributed throughout the major portions of both lungs. A large cavity was present in the right subapical area. The sputum contained many acid-fast bacilli on numerous occasions.

Anti-tuberculous therapy was started on January 31, 1956, consisting of INH, 300 mg. and PAS, 12 Gm. daily. The patient initially exhibited slight clinical improvement but he remained febrile and toxic. A roentgenogram of the chest one month later revealed definite progression of the pulmonary lesions.

At this point, February 29, 1956, streptomycin was added to the patient's therapy in dosage of 1 Gm. daily, and this medication was later increased to 2 Gms. daily. Viomycin was started on April 17, 1956, and INH was increased to 600 mg. each day.

Despite these measures, the patient's clinical condition continued to worsen; fever persisted with temperature elevations ranging up to 104°F; cough increased and was productive of large amounts of mucopurulent sputum; the body weight declined steadily and the patient complained of anorexia, dyspnea, weakness and prostration. A chest roentgenogram on May 3, 1956, disclosed still further progression of the pulmonary disease, characterized by a marked increase in the confluency of the lesions in both lungs (Fig. 2).

Thus, after three months of varied and intensive chemotherapy, the patient appeared to be in critical condition, and it seemed that he would surely die unless the course of his disease could be altered.

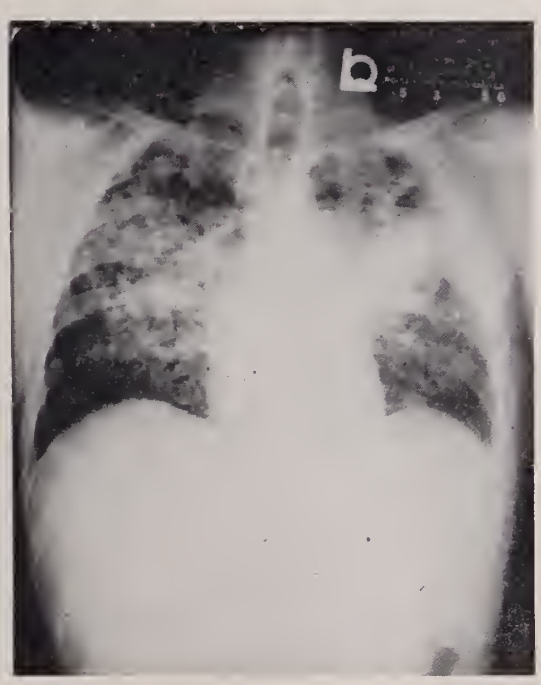


Figure 2. — (Case 1). Chest x-ray three months after starting chemotherapy, showing marked progression of the pulmonary lesions.

On May 7, 1956, prednisone was started in dosage of 60 mg. daily. No other change was made in the patient's management. Within twenty-four hours, miraculous improvement had taken place. Fever was gone; cough, dyspnea, sputum production and prostration had virtually disappeared and the patient felt so much improved that he requested a pass to go home. Anorexia was replaced by a ravenous appetite and a 40-pounds weight gain eventually resulted. An x-ray of the chest ten days after starting steroid therapy showed definite clearing of the pulmonary lesions (Fig. 3) and the sputum con-

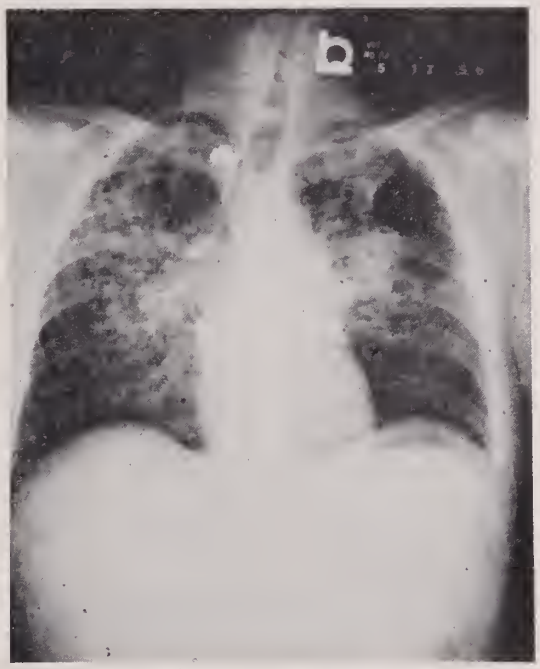


Figure 3.—(Case 1). X-ray of the chest ten days after institution of steroid therapy. Definite clearing has already taken place.

verted to negative. Prednisone was reduced to 30 mg. daily after three days and in one month a maintenance dosage of 10 mg. daily was reached. This therapy was finally terminated eight months later on January 9, 1957. Steady improvement continued (Fig. 4) until the patient's tuberculosis had become inactive. He was discharged from the hospital on April 17, 1957, and has remained well to the present time.

COMMENT: Although bacteriological sensitivity studies were not carried out in this case, the highly unfavorable clinical course clearly seems to indicate the presence of significant bacterial resistance to the drugs employed. The patient might be regarded as receiving no chemotherapy at all, or at least ineffective chemotherapy —a situation in which the adrenal steroids notoriously exert a detrimental effect. And



Figure 4. — (Case 1). Chest film two years later, showing maximal clearing of the pulmonary disease.

yet the addition of prednisone to the patient's management brought about a life-saving change in the course of his disease —a happy result to be sure, but one for which a suitable explanation is not presently at hand.

Case No. 2—L.K., a 66-year-old white male, was admitted to the hospital on April 24, 1957, for the treatment of pulmonary tuberculosis. He gave a history of empyema in 1918 and known tuberculosis since 1940. His chief symptom had been recurrent hemoptysis for many years. Prior therapy had consisted of bed rest and a course of SM and PAS of one hundred and twenty days' duration in 1950. A lobectomy, for removal of a contracted RUL with central cavitation, was recommended and refused at that time. Thereafter the patient had no significant difficulty until one month prior to the present admission when he developed a painful and swollen right knee associated with the onset of chills, fever, night sweats and a weight loss of 20 pounds. Fluid was aspirated from the right knee by the patient's private physician and was reported to contain acid-fast bacilli on direct examination.

On admission the patient appeared severely cachectic and gravely ill. There were moist rales throughout both lungs. The right knee was swollen and painful; the right epididymis was nodular and the liver was enlarged and tender.

An x-ray of the chest disclosed marked contraction of the right upper lobe with evidence of central cavitation in this area. Small, poorly defined nodular lesions were scattered throughout the remainder of both lungs (Fig. 5).

The sputum was positive for tubercle bacilli which were later found to be sensitive to SM, PAS and 5 mcg. of INH.

On May 2, 1957, specific antituberculous therapy was started with streptovaricin, 3 Gm. and



Figure 5.—(Case 2). Admission chest x-ray, April 24, 1957.

INH, 300 mg. daily. There was no response. The patient's clinical condition rapidly deteriorated and his course was characterized by high fever, severe prostration, tachypnea (50 per minute) arrhythmia, weight loss of 13 pounds, cyanosis, nausea, vomiting, suspected tuberculous peritonitis with paralytic ileus and associated electrolyte disturbances.

A repeat x-ray of the chest on May 3, 1957, disclosed very marked progression of the miliary lesions throughout both lungs (Fig. 6).

On May 6, 1957, streptomycin, 2 Gm. daily and PAS, 15 Gm. intravenously each day were started. INH was increased to 800 mg., the patient was given continuous oxygen and multiple supportive measures were employed. Streptovaricin was discontinued because he could no longer take oral medications. In spite of this intensified treatment, no improvement was noted. By May 9, 1957, the patient was moribund. Prednisone, 60 mg. daily, was started at this point but the patient's condition appeared so grave that a resident physician remarked that he would surely die before the steroid could take effect. Fortunately, this opinion was wrong; immediate and dramatic improvement took place. The temperature promptly fell to normal, dyspnea and other symptoms abated, ileus and electrolyte disturb-



Figure 6. — (Case 2). X-ray of the chest shortly after institution of chemotherapy, showing marked progression of the miliary lesions in both lungs.

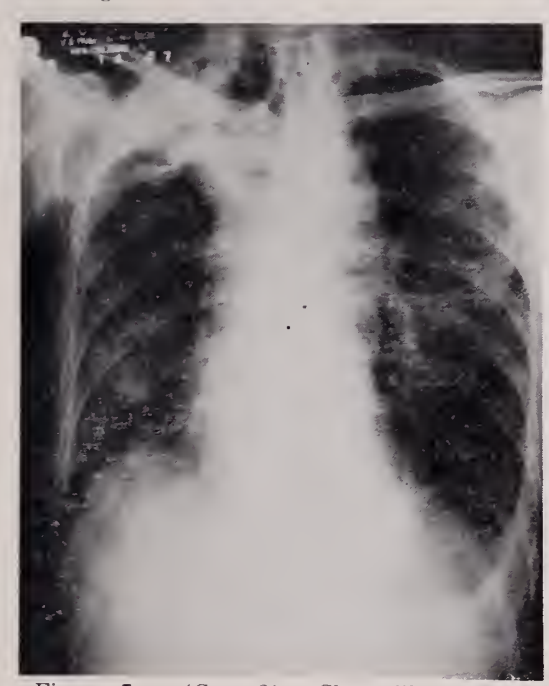


Figure 7. — (Case 2). Chest film five days after starting steroid therapy. Remarkable clearing of the miliary lesions has taken place.

ances disappeared. The patient began to eat well and subsequently gained 42 pounds in weight. His sputum soon converted to negative and the effusion of the right knee quickly subsided. Most remarkable of all, an x-ray of the chest taken only five days after the start of prednisone therapy disclosed striking clearing of the diffuse pulmonary lesions (Fig. 7). Another film, less than a month later, showed complete clearing of the miliary densities while the pre-existing contraction of the right upper lobe remained unchanged.

The patient continued to improve even after steroid therapy was withdrawn (four months later) and he was discharged from the hospital on March 9, 1958.

COMMENT: Although there is a possibility — however remote — that the dramatic reversal of the clinical course in this case was solely the result of specific antituberculous chemotherapy, there is no doubt in the minds of those who observed the patient at the bedside that prednisone was directly responsible for saving his life.

The foregoing cases demonstrate the value of steroid therapy in pulmonary tuberculosis, but the exact mechanism of action of these agents remains uncertain.

Mechanism of Action

It is possible that these hormones produce their beneficial effect in a variety of ways:

1. By suppression of the normal inflammatory response to infection,[7, 27] leading to decreased exudate, delayed tissue destruction and ultimately a decrease in the formation of fibrous tissue.
2. By replacement of specific adrenal hormone insufficiency,[21] leading to improved general resistance.
3. By reducing toxicity through a blocking action of tissue hypersensitivity to tuberculo-protein [22] and thereby improving the general state of nutrition and resistance.
4. By some type of synergistic action with antituberculous drugs or even a direct suppressant effect on multiplication of tubercle bacilli.[23]
5. One of the most intriguing theories of all is that the steroids may produce poor localization of infection and at the same time — by suppressing macrophage response and other local tissue defense mechanisms—actually cause more rapid multiplication of the tubercle bacilli. Thus, the chemotherapeutic agents would be able to

reach the areas of infection more readily and would at the same time exert their greatest effect against the actively dividing organisms.

But whatever the mode of action of these agents, the fact remains that they have already proved a valuable, sometimes life-saving, addition to our armamentarium against tuberculosis; that they are gradually finding their place in the treatment of this disease and that their importance seems to be steadily increasing. It is not inconceivable that the adrenal steroids eventually may become a "routine" form of treatment in this field.

Summary

The uses of adrenal steroids in the treatment of various forms of tuberculosis are reviewed with particular emphasis on the life-saving effects of these agents in patients with severe, fulminating pulmonary disease which is unresponsive to chemotherapy. Representative cases are presented in detail, and the possible mechanisms by which the steroids exert a beneficial effect in the treatment of tuberculosis are discussed.

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The Treatment of Hypercholesterolemia By Interference With Cholesterol Biosynthesis Using Mer-29*†‡

• An evaluation of the use of a new drug in lowering serum cholesterol levels and a resume of the literature on the subject.

JOHN T. LECKERT, M.D.
GORDON McHARDY, M.D.
ROBERT McHARDY, M.D.
GEORGE E. WELCH, M.D.
HAROLD CRADIC, M.T.
New Orleans

THE high incidence of atherosclerosis in patients with hypercholesterolemia is demonstrated in diabetes mellitus, familial hypercholesterolemia and familial xanthomatoses. Dawber and associates [1] in the Framingham study found that hypercholesterolemia in nonobese normotensive males is associated with a sixfold increase in the risk of developing arteriosclerotic heart disease. Epidemiologic studies [2] indicate a relatively low incidence of coronary artery disease due to arteriosclerosis in populations with low concentrations of the serum cholesterol. It would seem logical, then, to reduce the serum cholesterol particularly in the presence of atherosclerosis. None of the methods currently available have been entirely satisfactory. In our series,[3] sitosterol and unsaturated fatty acids in the form of safflower oil derivatives caused respectively a 24 and 28 per cent reduction in the serum cholesterol. Anorexia, other gastrointestinal disturbances, quantity and cost of medication make the prolonged continuation of therapy difficult. Massive doses of nicotinic acid will reduce the serum cholesterol, but it too causes gastrointestinal disturbances as well as cutaneous vasodilatation and pruritus.

In hypercholesterolemic men [4] and postmenopausal women,[5] estrogens cause a decrease in the serum cholesterol and an increase in the phospholipids. The chief disadvantages, however, of their use are the feminizing effects in men and the uterine bleeding that may occur in postmenopausal women.

MER-29 (Triparanol) was synthesized by Palopoli.[6] As indicated in Figure 1, it

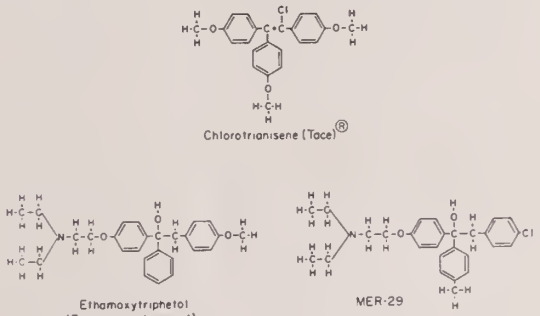


Figure 1

resembles the synthetic estrogen, chlorotrianisene [7] (Tace®), but is actually more closely related to MER-25 [6] which is an estrogen antagonist. Yet, these minor changes (a methyl group in place of hydrogen and chlorine in place of methoxyl) have endowed MER-29 with the unique

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From the Department of Medicine, Louisiana State University School of Medicine, Tulane University School of Medicine and Browne-McHardy Clinic, New Orleans, Louisiana.

† MER-29 for this study supplied by the Wm. S. Merrell Company, Cincinnati, Ohio.

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property of interference in cholesterol biosynthesis. It thus reduces serum cholesterol, but is neither an estrogen nor an estrogen antagonist. In this study we have attempted to determine the efficacy and side effects of MER-29, as well as any evidence of hepatic, hematologic or renal toxicity.

Material and Method

We have had under treatment with MER-29 44 patients who have hypercholesterolemia. We are attempting to follow these with monthly determinations of the serum cholesterol by the method of Bloor and associates,[8] and the cholesterol esters, by the method of Zak and associates.[9] We are recording all side effects and studying any toxicity as evidenced by the determinations of the bromsulphalein, cephalin flocculation, prothrombin time, serum glutamic oxalacetic transaminase, serum glutamic pyruvic transaminase, non-protein nitrogen, PSP, urinalysis and complete blood count. This report represents 26 patients under treatment for more than one month, whose reliability for cooperating with the therapy can be depended upon. Of these 26 patients with hypercholesterolemia, 18 have arteriosclerotic heart disease. Of these, 9 have angina pectoris. Seven have healed myocardial infarctions. Two have familial hypercholesterolemia. Of the other 8 patients with hypercholesterolemia, 2 have cholelithiasis. One had phlebothrombosis of the left popliteal vein. One has arteriosclerosis obliterans and had an occlusion of the right popliteal artery. One has mild hypertension. Two have hypertensive cardiovascular disease; one of these has gout, polycystic kidneys and hyperlipemia. The remaining patient has only hypercholesterolemia and osteoarthritis. Dietary fat was unrestricted in most of the cases.

Results

Figure 2 shows the serum cholesterol in 9 patients under treatment from one to four months. The dosage of MER-29 used in this and the succeeding graphs is indicated by the character of the lines.

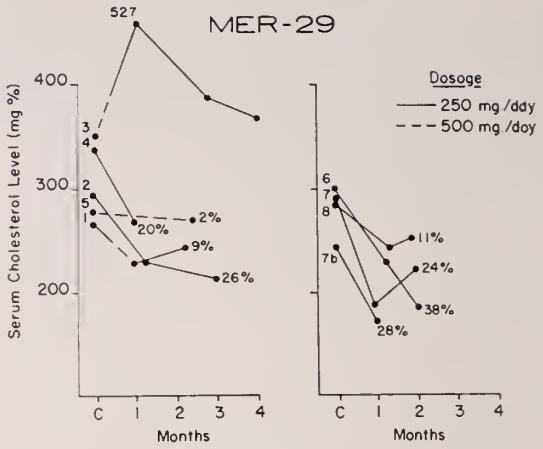


Figure 2

Continuous lines indicate a dosage of 250 mgm. daily, broken lines, 500 mgm. daily and a dotted line, which occurs in one of the latter graphs, 750 mgm. daily. The number at the end of the line on the graphs indicates the percentage reduction of the initial serum cholesterol. You will note that one case shows an actual increase in the serum cholesterol. In the rest the reduction varies from 2 to 38 per cent. Figure 3 depicts 8 patients un-

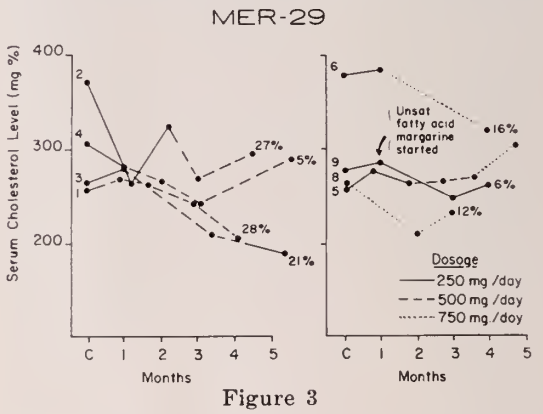


Figure 3

der treatment for four to six months. Here too you will note one patient shows an actual elevation of the serum cholesterol while under therapy, which varied from 250 to 750 mgm. per day. You will also note that one patient showed an actual rise on a dosage of 250 mgm. daily during the first month of therapy, but has shown a progressive fall after the dosage was increased to 750 mgm. daily. Another case showed a rise during the first month of therapy, but a fall after unsaturated fatty acid margarine was

substituted in the diet. The percentage reduction in the serum cholesterol for the 7 patients that responded varies from 5 to 28 per cent. Figure 4 shows 9 pa-

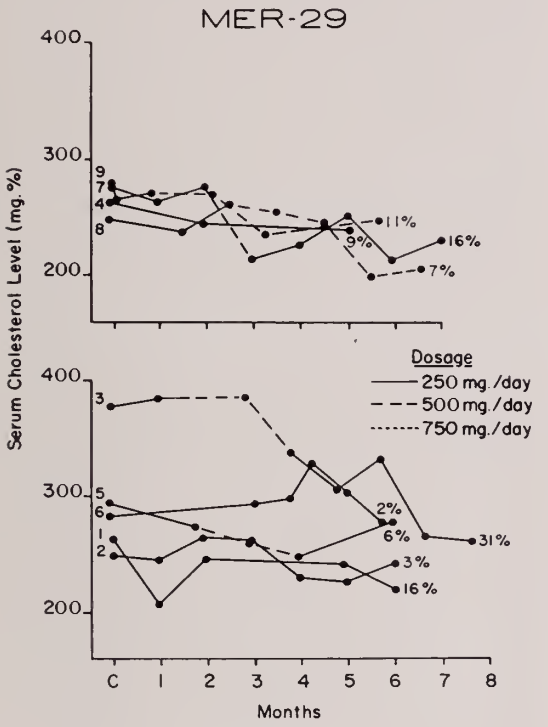


Figure 4

tients who have been under treatment for more than five months. All of these show a reduction in the serum cholesterol varying from 2 to 31 per cent. In the 24 patients showing a response to treatment the average serum cholesterol reduction was 15 per cent (47 mgm. per cent).

At our dosage level the side effects have been minimal. One patient experienced nausea and headache starting one week after the beginning of treatment and occurring one hour after the capsule was taken. This was absent if the capsule was omitted. She discontinued treatment for one week and was able to restart therapy without these symptoms. One other patient experienced nausea which necessitated stopping the drug, but was able to restart it later without any symptoms. To date we have no evidence of renal, hepatic or hematologic toxicity. There was a transient slight abnormality of the serum glutamic oxalacetic transaminase in one patient and in the bromsulphalein of another. Another patient has shown an increase of the cephalin flocculation from 1 plus to 3 plus, but the alkaline phosphatase, thymol turbidity, bromsulphalein, serum bilirubin, serum glutamic oxalacetic transaminase and serum glutamic pyruvic transaminase have remained normal. One patient has shown an elevation of the serum glutamic pyruvic transaminase to 50 with a serum glutamic oxalacetic transaminase of 40 and normal cephalin flocculation. In our opinion, these slight changes are not indicative of any liver damage.

We have determined the cholesterol esters on all of our patients. Figure 5

Cholesterol Esters

Months of Treatment	Percentage Before	After	
1 1/4	77	73	
3 1/2	81	62	
3	53	41	Hyperlipemia
1	74	71	
2 1/2		82	
2	69	57	
2 1/2	76	79	*
1 3/4		70	
3 3/4	62	88	*
4 1/2	81	60	
5 1/2	73	57	
5 3/4	71	65	
3 1/2		78	
1	64	84	*
4	75	77	*
3 1/4	70	73	*
6 1/2	82	72	
6	78	65	
7 1/2	62	59	
5 1/4	69	76	*
5 3/4	60	73	*
6	66	78	*
7	87	71	
6 1/2	74	77	*
6	72	64	
3 1/2	64	66	*

Figure 5

depicts the months of therapy and the percentage of cholesterol esters. You will note that 10 of these show an increase in the percentage of esters. Three patients did not have an initial determination of the esters. The remainder show a decrease in the percentage of esters. There is only one figure below the lower limit of normal (50 per cent).[1] This is a patient with hyperlipemia whose total cholesterol went from 391 to 468 and whose esters concurrently changed from 204 to 191. We do not believe that this one isolated incident in a quite unusual

patient with hyperlipemia, hypertensive cardiovascular disease, gout and polycystic kidneys is indicative of interference with the esterification of cholesterol.

Discussion

The biosynthesis of cholesterol [11, 12] from acetate is outlined in Figure 6. Most of the acetyl coenzyme A is derived

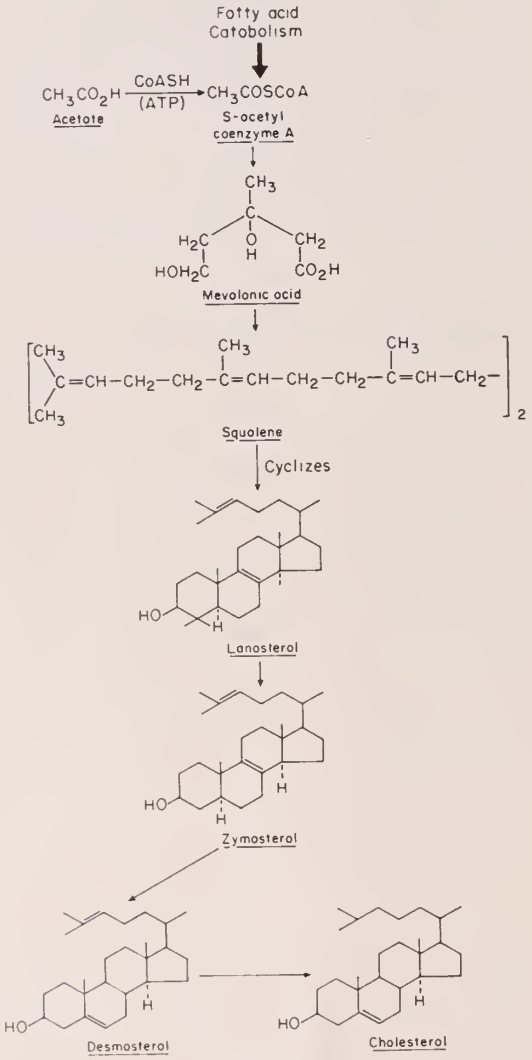


Figure 6

from fat catabolism. Acetyl coenzyme A is changed by various steps including mevalonic acid with the eventual formation of squalene which is a long chain hydrocarbon. Squalene then cyclizes to form lanosterol and thus the steroid nucleus. The remaining steps in the synthesis of cholesterol include zymosterol and desmosterol.

Curran and Azarnoff [13] have outlined what they consider the ideal characteristics of a satisfactory inhibitor of cholesterol biosynthesis. It must be nontoxic at inhibitory levels. It should be water soluble and absorbable from the human gastrointestinal tract. It must inhibit tissue synthesis as well as reduce serum levels. It should act after acetyl coenzyme A and before the cyclization of squalene. An inhibitor acting after acetyl coenzyme A is preferable because this compound is derived mostly from fat catabolism. If the inhibitor acted after squalene had undergone cyclization to form the steroid nucleus, there would result a cholesterol precursor that might be atherogenic itself. MER-29 certainly fulfills these first two requisites. The work of Blohm and MacKenzie [14] confirms that it also inhibits tissue synthesis, but after the formation of the steroid nucleus. Blohm and associates [15] have demonstrated reduction of the cholesterol levels in rat plasma, erythrocytes, liver, skeletal muscle, lung, adrenal and aorta after chronic administration of MER-29. Mobberley and Frantz [16] demonstrated that the liver of rats treated with MER-29 accumulated a sterol which behaved chromatographically and colorimetrically like zymosterol, as well as a weighable quantity of a higher counting companion. According to later studies by Steinberg and Avigan [17] it is rather desmosterol that accumulates. This substance gives approximately 60 per cent of the color produced by cholesterol in the Liebermann-Burchardt reaction. Thus, the accumulation of desmosterol in the serum would cause a false elevation of the serum cholesterol by the usual colorimetric method. As a result after treatment with MER-29, the true serum cholesterol determined gravimetrically should be lower than the reading by the colorimetric method.

Clinical evaluation of any drug used in the therapy of hypercholesterolemia is very difficult because the serum cholesterol is such a variable quantity. For example, stress will raise the level so that a sample taken when the patient is under

tension may be many milligrams above his usual value. Hollander and Chobanian [18] reported in their patients treated with MER-29 a 48 mgm. per cent reduction in the total serum cholesterol. They also showed by use of C14 labeled cholesterol a reduction in the miscible pool of cholesterol in man. It is interesting that in 3 of their 9 patients a striking improvement occurred in the electrocardiogram during exercise. Oaks and associates [19] reported an average reduction of the serum cholesterol of 58 mgm. per cent by the fourth week of treatment. Our patients showed a 47 mgm. per cent average reduction in the total serum cholesterol which compares favorably with the results of the above authors. In general, the status of our patients with angina improved, but because of the administration of coronary dilator drugs and the natural course of the disease, symptomatic improvement is very hard to evaluate. None of our patients have sustained myocardial or cerebral infarctions while under therapy, but of course, our longest follow-up is seven months. It would take a large series with controls to confirm that this drug really alters the natural course of atherosclerosis. It is interesting that Russek [20] was unable to confirm the improvement of the exercise electrocardiogram after treatment as reported by Hollander and Chobanian.[18]

This study verifies that MER-29 reduces serum cholesterol without significant side effects and devoid of hepatic, renal or hematologic toxicity. It would seem that the ideal inhibitor of cholesterol biosynthesis has as yet not been discovered. Benzmalacene inhibits the incorporation of acetate and mevalonic acid into the synthesis of cholesterol, so that its site of action is ideal. Page and Schneckloth [21] have treated 19 patients with this compound with significant reduction of the serum cholesterol in 10. Eight, however, of these 12 have developed abnormal bromsulphalein retention after two to four months of therapy ranging from 6 to 20 per cent. For this reason, they do not recommend benzmalacene. MER-29 is nontoxic, but it acts after the cyclization of squalene with the accumulation of a sterol which very closely resembles cholesterol. Since Nichols and associates [22] have demonstrated that the prolonged feeding of another sterol (dihydrocholesterol) to birds produces atherosclerosis, one must consider the possibility that the sterol accumulating with MER-29 therapy might be atherogenic. It is also interesting that Siperstein and associates [23] report that the feeding of dihydrocholesterol with a 1 per cent cholesterol diet resulted in a complete suppression of the lipemia, reduction of the serum cholesterol and great inhibition of the development of atherosclerosis as compared to the birds fed cholesterol alone. Of course, neither of these animal experiments may be applicable to clinical medicine.

In conclusion, this and other studies indicate that MER-29 is the best available, nontoxic drug for the reduction of serum cholesterol. With this is also combined an ease of administration (1 to 3 capsules daily) not enjoyed by sitosterol, safflower oil derivatives or nicotinic acid.

Summary and Conclusions

1. MER-29 resembles the estrogens but is void of their estrogenic problems.

2. This report comprises 26 patients with hypercholesterolemia who were treated with MER-29. Eighteen of these have arteriosclerotic heart disease.

3. Twenty-four of the 26 patients showed a reduction of the serum cholesterol averaging 47 mgm. per cent or 15 per cent of the initial cholesterol.

4. There have been no indications of hepatic, hematologic or renal toxicity.

5. MER-29 does not interfere with the esterification of cholesterol.

6. MER-29 inhibits cholesterol synthesis after the cyclization of squalene to form the steroid nucleus so that it is possible that an atherogenic precursor of cholesterol might accumulate.

7. MER-29 is the best available nontoxic drug for the reduction of the serum cholesterol.

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Discussion

Dr. Homer J. Dupuy (New Orleans): Dr. Leckert has given an excellent evaluation of the new anticholesterol agent MER 29 (Triparanol). I was particularly interested in his comment relative to the accumulation of a cholesterol precursor resulting from the inhibition of cholesterol biosynthesis, which might be as atherogenic as cholesterol.

The clinical observations noted in 10 cases, which we recently studied, closely resemble those of Dr. Leckert's. The drug was given for periods varying from four to eleven weeks. The dosage was 250 mg MER 29 every morning. All patients in the group had some clinical manifestation of atherosclerotic heart disease or arterial hypertension and all but one had a serum cholesterol over 266 prior to starting MER 29. The greatest reduction occurred in individuals having a higher cholesterol level, particularly in those over 300 mg%. No toxic reactions were noted.

In this series of 10 cases, an average of 45 mg% reduction occurred. Hollander and Chobanian* have pointed out that a depression of serum cholesterol usually occurs in five to ten days of MER 29 therapy with a maximum effect after one to five weeks. Following the withdrawal of the drug, serum cholesterol increased to or toward control values in two to six weeks.

All cases in this series had been or were placed on a moderately low saturated fatty acid diet. Two cases, who had been on the moderately restricted diet prior to MER 29 without any appreciable reduction of cholesterol showed a rather significant change after starting MER 29. One case showed an elevation of 16 mg. after four weeks of therapy. As pointed out by Dr. Leckert, there are several factors capable of altering blood cholesterol. I personally feel that the solution to atherosclerosis will be found to be related to an error in endocrine metabolism.

The conflicting views relative to the significance of cholesterol and saturated fatty acids needs no further discussion here. In the light of present knowledge it is felt there is sufficient evidence to recommend a reduction (not elimination) of saturated fatty acids in the diet and anticholesterol agents in individuals who (1) have coronary heart disease or other manifestations of atherosclerotic disease, (2) arterial hypertension, (3) family history of atherosclerosis, (4) elevated serum cholesterol particularly in young individuals.

It has not been definitely established that

lowering the serum cholesterol changes the course of atherogenesis or that life is prolonged by reduction of cholesterol. When this question is settled, we can take an even more enthusiastic attitude regarding anticholesterol regimens. This much we can say at this time.

1. There is some relationship between the incidence of atherosclerotic heart disease and the incidence of hypercholesterolemia.

2. We do not know at this point whether lowering blood cholesterol will prevent an atherosclerotic attack or prolong life.

3. MER 29 (Triparanol) is a non-toxic cholesterol reducing agent that is easily tolerated by the patient.

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* Hollander & Chobanian: Boston Medical Quarterly, June 1959, Vol. 10, No. 2.

The Lister Method

For his antiseptic method, Lister has in no country been so severely and unjustly criticized as by some of his English colleagues. The Lancet referring to the surgical address delivered at the meeting of the British Medical Association, last summer, attempts to prove that after an "impartial trial" of the antiseptic method, the statistics resulting are in no way superior to those obtained from the older and more simple methods of dressing and operating, but in some respects are even inferior. The attack is founded upon statistics of operations at St. Bartholomew's Hospital, at London. * * The Lancet therefore concludes that "if the Listerians can show better results than these, they are unjust to themselves and unfaithful to the doctrine they profess if they any longer withhold the statistical results of their practice." It is true that the above stated results are praiseworthy, and that a new method, asserting superiority over the old must submit to trial and to criticism, but the Lancet's criticism of Lister's method is based upon no essential trial, and is therefore illogical. * * * But a number of leading surgeons on the continent, neither "young enthusiastics of the antiseptic system," nor yet "germ theorists," but eminent and able men, have tried the methods, compared the statistics, and have published the results. It is these statistics, and not any enthusiasm for the germ theory, that has spoken the deciding word in favor of Lister's method.

Chicago Medical Gazette, January 20, 1880, Quoted in N. O. M. & S. J. 7:910 (March) 1880.

A Note on the Natural History Of Tularemia

• The author queries whether drier weather has any effect on the incidence of tularemia, and invites reports on the experience of other observers.

W. C. CORWIN, M.D.*
Fayetteville, Arkansas

AT THE VA Hospital, Fayetteville, Arkansas, we have noted a decline in the number of cases of tularemia encountered since Corwin and Stubbs reported on 44 cases occurring during a three-year period ending December 31, 1950.[1] An adequate review of the literature is given in that paper and it is not proposed to furnish any further bibliography at the present time. Since then we have seen comparatively little tularemia. During the past nine years we have encountered a scant 19 cases.

The author has speculated considerably about this "drop-off" in morbidity. There has been a growing conviction that the drought years have contributed to the decline in the occurrence of the disease. I have conferred with meteorologists of the Fayetteville area and have found that the average annual rainfall for the three-year period reported in the earlier paper was 56 inches. During the years 1951 through 1956, this dropped off to an average of only 39 inches. The calendar year of 1957 showed a heavy precipitation of 64. In 1958, it had dropped back to 49 inches. In 1950, the last of the wet years, we encountered 11 cases of tularemia which were included in the review referred to above. However, for the period January 1, 1951, through December 31, 1959, we had from 1 to 3 cases only per annum.

Mode of Infection

During the nine-year period herein reported no clear-cut conclusions can be drawn with regard to the mode of infection, since 10 of the 19 cases were tick-borne, 5 were rabbit-borne and in 4 the source was unknown. In the paper referred to above, the figures again were not conclusive, since 28 cases were found to be tick-borne, 7 were due to contact with rabbits, and 9 were of undetermined origin.

However, the earlier communication revealed the striking figure of 75 per cent (33 of 44) of the cases occurred during the months of May, June, July and August; whereas in the 19 cases herein reported monthly distribution was as in Table 1.

TABLE 1
DISTRIBUTION OF CASES AS TO MONTH

January	2
February	1
March	1
April	3
May	2
June	3
July	2
August	0
September	1
October	1
November	2
December	1
Total	19

Age and Morbidity

In the present group of cases age seemed to have little bearing on the morbidity, since the youngest of these patients was twenty-nine and the oldest seventy-four. The disease, in most aspects, did not seem to be as serious as was reported in the paper written formerly; the maximum oral temperatures ranged from 99.2 to 105.2, but averaged only 101.6. It is of interest to note that the patients who had the disease in 1951 and 1952 reported to the hospital within the first week of their illness;

* Chief, Medical Service, Veterans Administration Hospital, Fayetteville, Arkansas.

whereas later they were inclined to defer their admission. This fact is probably due to the general lay knowledge that tularemia was rampant in the wet years but that it had somehow or another nearly disappeared, if not from the field, at least from the minds of the people.

Type

In the small series of 19 patients there were no mortalities, even in the four cases of pulmonary or typhoidal tularemia. Though many textbooks still give a variety of broad-spectrum antibiotics and combinations thereof as the choice of treatment, we have always adhered to streptomycin or dihydrostreptomycin. Of these 19 cases 15 were ulceroglandular tularemia, 2 were pulmonary tularemia and 2 were the typhoidal type. All 4 of the latter patients had high fever and carried high titers for tularemic agglutination. There were no instances of ocuglandular tularemia. The primary chancre was found with about equal frequency on the thigh, the chest wall, and the finger.

Conclusion

The over-all twenty-year rainfall was annually 47 inches, despite the fact that in 1957 it was 64 inches and nearly fell back to the twenty-year average in 1958 when it was 49. The effect of the drought is still noted in the fact that tick life is at a minimum as compared with the wet years considered in the original paper of 1952. As yet there has been no distinct increase in tick life and only now have the rabbits begun to come back in any great numbers. Of course this is mere speculation, but it is believed the rabbits were either killed by the drought itself, by tularemia, or by both.

Comment

This note is being brought forth in the hope that it will arouse some interest in the meterological aspect of tularemia and that others may have noted the same phenomenon. The author will be most happy to receive any communications regarding the experience of others. If the thesis that tularemia is rampant during prolonged wet periods and is greatly decreased during drought periods is correct, it might be of some value from an epidemiological point of view.

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Louisiana State Board of Health

The combined action of the Governor of the State and the City Council has reorganized this body, with the following result: President, Dr. Joseph Jones; Secretary, Dr. S. S. Herrick; Drs. F. Loeber, F. Formento, E. T. Shepard, and J. C. Beard, and Messrs. I. N. Marks, Robert Brewster, and E. Hernandez, members. Great activity and singleness of purpose is being displayed, and it is probable that greater efforts toward sanitation will be made this year than ever before. New Orleans will be cleansed and disinfected. The New Orleans Auxiliary Sanitary Association which last year did such important service by employing a force to forward sanitation, has already commenced by laying pipes for the purpose of flushing the street gutters, and we are glad to state that this Association and the Board of Health are in harmony, and will work together to keep New Orleans free from disease. The shipping will be carefully watched, and the cleansing of all vessels arriving at this port demanded.

Editorial: New Orleans M. & S. J. 7:1067 (May) 1880.

Carcinoma of the Colon; A Disease of Later Life

• Carcinoma of the colon and rectum are fifth in frequency of incidence. Resection, if there is no metastatic lesion, offers the best prognosis of any carcinoma of the intestinal tract.

HARRY B. GREENBERG, M. D.
New Orleans

Incidence

A LONGER life span and the control of many of the infectious diseases have been accompanied by an increase in the incidence of those illnesses common to advancing years, in particular cancer. Estimates place 17 per cent of all deaths due to cancer as originating from cancer of the colon and rectum.[1] In the past decade the operative mortality has declined and resectability rates have risen. More patients now have an opportunity for curative surgery than ever before. There has been an increase of 10 to 20 per cent in the number of persons over 70 undergoing surgery for colon carcinoma.[2]

The colon and rectum are the fifth most frequent sites of carcinomatous disease and almost 70,000 persons in this country now suffer an incurable carcinoma of these organs.[2] Cancer in these sites causes about 32,000 deaths yearly. Though occasionally reported in patients as young as the age of 15, it is essentially a disease of middle and later life, generally occurring during the years between 40 and 70, with an equal sex incidence.[3-5] These carcinomas are often slow growing, metastasize late, and a patient with an incurable growth may survive from one to five years.[3]

Symptoms and Signs

The symptoms during this time are anemia, hemorrhage, debility, ascites, perforation, and peritonitis. Symptoms of partial or complete intestinal obstruction develop in approximately one-third of the patients with carcinoma of the colon.[6] Additional symptoms are produced by carcinomatous metastases to the liver and other organs.

Practically all patients with a diagnosis of carcinoma of the large bowel will have a long history of vague digestive complaints and symptoms of a general nature.[5, 6]

In the series of 252 patients with carcinoma of the colon reported by Hallstrand,[7] there was an average delay of 7.18 months between the onset of symptoms and diagnosis. Some persons possess a resistance to cancer and a long history does not necessarily imply an unfavorable prognosis. Muir [8] noted an average duration of preoperative symptoms of 10.7 months in patients with cancer of the right colon who survived five years or longer. If there is no evidence of a carcinomatous spread beyond the resection site, a 50 per cent or greater chance of a five-year survival is present.[9, 10] These postresectional five-year survival rates for carcinoma of the colon and the rectum compare very favorably with those of pulmonary carcinoma, (17 per cent), and offer the best prognosis of any carcinoma of the gastrointestinal tract.[11, 12]

Many of the signs and symptoms caused by carcinoma of the colon depend on the location of the carcinoma and the degree of obstruction as well as the presence of metastases. However, some symptoms are so consistent in appearance that their presence in a person of middle life or beyond warrants an investigation for this very common carcinoma. These are recurrent abdominal pain and distress, gross rectal bleeding, and any change in the bowel habit. The abdominal discomfort may follow eating or it may be accompanied by a desire to defecate and be partially relieved by defecation.[5, 10] Hemor-

rhoids, to which bloody stools may be attributed, frequently accompany carcinoma of the colon.

Coller [5] reports that 75 per cent of a group of patients with colon carcinoma had received prior treatment for hemorrhoids. The presence of a lesion in the stomach or duodenum, amebiasis, or other inflammatory disease of the colon may be held responsible for some of the early symptoms caused by carcinoma and symptomatically treated without x-ray and sigmoidoscopic examinations of the large bowel. Over 60 per cent of the carcinomas of the colon and the rectum can be palpated on rectal examination or visualized by sigmoidoscopy.[13] The remainder, which are located beyond the range of sigmoidoscopic vision, and missed by upper gastrointestinal surveys can be detected in an early phase by the use of barium enema and air contrast examinations of the large bowel. A barium enema examination will also permit the diagnosis of such precancerous lesions of the colon as mucosal polyps.

Case Reports

The following cases demonstrate the obstructive course of carcinoma of the colon in its later stages and illustrate the need for a continued awareness of this disease.

Case No. 1.—F. K., a white female nurse age 65 was admitted to Touro Infirmary on October 1, 1959, with a diagnosis of early intestinal obstruction.

She stated that for seven months prior to admission she experienced abdominal distress and distention after meals. For the past eight weeks she had suffered intermittent cramping abdominal pain, increasing weakness and fatigability. Several days after the pain occurred she discovered a tender mass, the size of an orange, in the right lower quadrant of the abdomen. At first the pain occurred infrequently and long intervals of relief followed the use of paregoric. The pain increased both in frequency and severity and the abdomen became distended. She noticed that an increased prominence of the right lower abdominal mass coincided with the onset of cramping pain. There was much nausea. The last bowel movement occurred two days before hospitalization.

At the time of admission the pain was almost constant, the abdomen was distended and borborygmi were audible. Temp. was 99°F, blood pressure was 100/60.

The packed red cell volume was 30.5 per cent, white cell count 13,589, neutrophiles 86 per cent, lymphocytes 12 per cent, basophiles 1 per cent, monocytes 1 per cent.

The physical examination revealed an acutely ill woman in great distress. The abdomen was moderately distended. There was generalized abdominal tenderness with pain on palpation over a firm rounded mass, about 15 cms. in diameter, which was located in the right lower quadrant of the abdomen. The mass could be observed pushing the abdominal wall outward. Peristalsis was hyperactive and from time to time a distended loop of small bowel would appear, subsiding after a brief interval.

Scout flat and erect roentgenograms of the abdomen (Figure 1) revealed gas containing loops of small bowel in the mid-portion of the abdomen. On the upright film (Figure 1-B) fluid levels were noted, both in the region of the cecum and in the small bowel. A diagnosis of early intestinal obstruction was made and surgical consultation was obtained.

After preparation a laparotomy was performed. A firm mass was found in the hepatic flexure of the colon which was resected. A large ulcerated, circumferential, napkin ring lesion measuring 4 by 8 cms. was located 10 cms. from the distal end of the cecum. The microscopic examination showed the tumor to be an adenocarcinoma grade III, with extension to one regional lymph node. There was no evidence of hepatic or other metastases. The patient responded well following surgery and is again actively engaged in nursing.

Case No. 2.—E. S. A white female, age 82, was hospitalized at Touro Infirmary on May 2, 1955, with a complaint of severe lower abdominal pain. She stated that six months before admission she began to suffer an increasingly severe cramping pain which radiated across the lower abdomen. The pain was not related to eating. It was accompanied by a desire to defecate and there was diminution of the pain after a bowel movement. Some relief could be obtained with paregoric. There was no change in stool frequency; however, several stools had been streaked with bright blood. There was marked anorexia and a considerable weight loss.

Physical examination showed a chronically ill elderly woman with evidence of recent weight loss. Blood pressure was 170/64, temperature was 98.6.

The physical examination of the abdomen was non-contributory.

Complete blood count was: hemoglobin 11 gm., red cell count 4,240,000, color index 0.84, white cell count 12,150, neutrophiles 69 per cent, lymphocytes 27 per cent, eosinophiles 2 per cent,



Figure 1. (A) Case No. 1. Plain film in recumbent position. (B) Plain film in erect position.

monocytes 2 per cent. The stool was positive for occult blood.

A barium enema examination showed an annular constriction, 3 cms. in length in the sigmoid colon. The intestinal lumen was narrowed to 0.5 cms. in diameter at this point. Shelf formation was present. There were numerous diverticula throughout the colon, particularly in the lower descending colon and sigmoid.

A surgical consultation was obtained and after preparation an anterior resection of the rectosigmoid with an end-to-end anastamosis was performed. A large fungating, ulcerated neoplasm which completely encircled the bowel was found. The microscopic examination of the specimen showed an adenocarcinoma grade III. A small metastatic growth was present in the liver. Ten diverticula were in the specimen and there was an acute hemorrhagic exudate in the wall of one diverticulum.

The patient recovered and remained clinically well until September 1957, when she became jaundiced. She died on September 23, 1957, from carcinomatosis.

Discussion

As a carcinomatous obstruction of the colon develops, symptoms of an acute nature will occur. Colicky pain is produced by the increased contractility of the bowel and the patient may note the appearance of a mass or a distended loop of bowel. Visible peristalsis may be present. The distended intestine or tumor mass is frequently observed by the medical examiner.[14]

About 90 per cent of the acquired obstructions of the large intestine are caused by carcinoma and 15 to 20 per cent of patients with a carcinoma of the colon have some degree of intestinal obstruction as their presenting clinical symptom.[15] If the iliocecal valve is incompetent in the presence of an obstructive lesion located distally in the large bowel, an x-ray picture simulating an acute small intestinal obstruction may be present with air fluid levels appearing in distended loops of small intestine.[15, 16] If operative intervention is delayed to permit lengthy attempts at intestinal decompression, there is an increased hazard of rupture of the colon, whose lesser muscular coat renders it more susceptible to rupture than the small intestine.[17] Most carcinomatous obstructions

of the colon are located distal to the splenic flexure,[15] and obstruction is more likely to complicate carcinoma of the left colon than the right, the incidence being approximately nine to one.[17]

The common symptoms of carcinoma of the colon are a change in the bowel habit, abdominal pain either colicky, griping, dull or achy often precipitated by eating, weight loss, anorexia, weakness, and indigestion. A palpable mass may be present which is often first noted by the patient. Although gross bleeding is not so frequent in carcinoma of the right colon as in the left, anemia is very common in right colon carcinoma and an investigation of the colon is often productive when an anemia of obscure origin is discovered.[7] Both carcinoma and diverticulitis occur in the same age groups and may cause similar symptoms of partial intestinal obstruction and rectal bleeding.

Summary

Carcinoma of the colon and rectum, generally occurring in individuals past the age of forty, often presents early symptoms which are vague and may be overlooked. Negative roentgenographic surveys of the upper gastrointestinal tract may give a false sense of security. The value of sigmoidoscopic and barium enema examination of the colon in the early detection of malignancy cannot be overemphasized.

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Louisiana State Medical Association

The Third Annual Session of this organization was held in this city on March 31st, April 1st and 2nd. The meeting was harmonious and instructive, and the delegation from the country quite large, considering the difficulties attending transportation. A number of valuable papers were read. * * * When we consider the failure of former state medical organizations in Louisiana, there is reason for congratulations now, as the earnest efforts of the members preclude any possibility of its dissolution. The Fourth Annual Session will be held in New Orleans, on the last Wednesday in March 1881.

An Epitheloid Type of Malignant Melanoma of the Choroid*

• A case report is given together with some of the known facts about this rare eye disease.

LEON F. GRAY, M.D.
J. A. WILKINSON, M.D.
Shreveport
C. L. SCHEPENS, M.D.
Boston

THE patient was sixty years of age, a white man, well nourished. He worked daily. His chief complaint was that he had poor vision in the left eye. The eyes appeared to be normal externally. The vision of the right eye was 20/20 with correction. The vision of the left eye was fingers at four feet.

The eyes moved normally in all directions.

The tension was 18 mm. of mercury, using a Schiotz tonometer.

The fundus of the right eye presented no pathology. The fundus of the left eye presented a large cyst-like detachment of the retina. This was located in the upper temporal part of the globe, just behind the iris.

A visual field was made of each eye. The right eye was found to be normal. The left eye presented a large scotoma. The only part of the field with which he could see was a small area which was located between the 120th and the 270th meridians. This area extended from the 20th degree point on the 120th meridian, around and downwards to the 15th degree point on the 270th meridian, centrally. It extended up to the 30th degree point on the 120th meridian, outward as far as the 60th degree point on the 180th meridian, outward as far as the 60th degree point on the 180th meridian and downward to the 45th degree point on the 270th meridian. From this description, it can be realized that he had only a small amount of vision which was located in the temporal and lower temporal field. The scotoma eliminated the central vision and most of the peripheral vision.

He was referred to Dr. C. L. Schepens of Boston. He found the same mass, in the same area. Fluid was withdrawn from the mass, by needle. It was necessary to perforate the sclera opposite the growth to do this. The fluid was examined under the microscope, but presented no malignant cells.

A P32 Test was done at the time of surgery. It revealed a 100 per cent uptake of P32 LVA as compared with the controlled area. The eye was then enucleated. No evidence of extra bulbar extension of the growth was found.

The pathologist's report was: "an epitheloid type of malignant melanoma of the choroid."

The patient, so far, is well and presents no signs of metastasis. However, his life expectancy should not be very long.

This is an extremely rare disease and the average ophthalmologist may see only one or two in his lifetime.

Because of its rarity, the balance of this paper is a history and a description of the tumor, most of which is taken from Dr. Tronsco's text book of "Internal Diseases of the Eye and Atlas of Ophthalmoscopy."

Incidence

Malignant melanoma is a rare disease, occurring, according to statistics, in about

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

0.02 to 0.06 per cent of eye patients, or in about 2 to 6 per cent of every 10,000 patients. It occurs with equal incidence in the two sexes. As to age, about 45 per cent are seen in the 5th and 6th decades of life. As to the part of the eye affected, the vast majority occur in the choroid: choroid 85 per cent, ciliary body 9 per cent, iris 6 per cent. The greater proportion are found posteriorly and on the temporal side. The co-existence of malignant disease elsewhere is rare.

Etiology

As to etiology, we find ourselves groping blindly, for no one has discovered the cause of melanomata or any other type of malignancy; however, there may be grounds for considering some things as possible contributory causes. Among these is heredity, though there is little evidence to support such a theory in this type of tumor. Previous injury as an etiological factor must be considered as a possibility, though no one seems to have established any positive proof. Prolonged inflammation has also been suggested as a contributing factor.

Sarcoma is the most frequent malignant growth developing in the choroid. It usually begins in the outer layers and grows inward, owing to the greater resistance of the sclera. The pressure on the lamina vitrea increases until the tension is so great that it ruptures, and the tumor protrudes into the vitreous in a mushroom-shaped mass covered by the detached retina. In rare cases the extension takes place chiefly laterally and the sarcoma diffuses within the choroid, very frequently invading the ciliary body and even the iris; to this type the name diffuse or flat sarcoma has been given.

Sarcoma of the choroid is made up of so-called round or spindle-shaped cells, derived from the chromatophores. It is almost pigmented (melanosarcoma), the nonpigmented sarcoma (leukosarcoma) being a rarity. The pigment is produced by a process of oxidation of the sarcoma cells. The blood-vessels are wide and numerous and are often lined directly by tumor cells; capillaries are not present.

Writers divide the course of choroidal sarcomas into four stages similar to those already described in retinoblastoma. In the first stage, called initial or ophthalmoscopic stage, the tumor appears as a small circumscribed, gibbous or knob-like growth of a brown color, to the surface of which the detached retina is tightly adherent. Through the transparent retina the vessels of the choroid, or new vessels formation, are sometimes visible. When the sarcoma is situated far forward, it can be seen by oblique illumination through a dilated pupil. At this stage the only functional symptom is an impairment of sight due to a defect in the field of vision, which is differently located, according to the site of the tumor. If it is in the periphery, central vision may remain normal for a certain time.

With the growth of the sarcoma there is usually a disturbance in the circulation of the choroid by interference with the venous outlets. Fluid collects between the retina and the choroid, and the detachment changes to the serous type. The retina becomes opaque and because of this and the amount of subretinal liquid the tumor can no longer be seen. Usually the detachment does not remain confined to the site of the tumor, but extends around in a greater area, sometimes even occurring at a distance in the lower part of the fundus, independent of the location of the tumor.

Diagnosis

The diagnosis of tumor becomes very difficult when it is concealed by the serous detachment. In this case we can rely only upon:

1. The condition of the intraocular tension which, normal in the beginning, soon becomes increased; while in simple detachment the tension is generally lower and remains so.

2. The results of transillumination. This method consists in illuminating the pupil by strong rays of light passing through the sclera and diffusing into the vitreous. The source of light is held against the lids or against the sclera (the

eye being previously cocainized), and moved all around the limbus and back, toward the fornix. The observer places his eye in a direction opposite the point in which the light stands upon the dilated pupil, illuminated with a red glow. When there is an opaque mass intercepting the rays of light coming to the observer's eye, that is, in case of tumor, a black shadow will replace the red glow in the pupil at that particular spot. The size of the growth can be estimated by the extent of the shadow.

3. The use of the biomicroscope. With it a method called "pupillary transillumination" has been devised to detect intraocular tumors. A round beam of light is thrown upon the tumor through the pupil, the observer looking at the same spot. The mass appears to be black or reddish in color, according to whether it is opaque or translucent.

4. A puncture of the sclera made with a very fine needle at the site of a suspicious detachment. This can be of use in two ways: (a) When the needle is inserted into a mass it cannot be moved freely inside when the surgeon displaces it; (b) liquid withdrawn from the eye avoiding the tumor may disclose pigmented sarcoma cells after centrifugation. Fehr and others, however, warn against this method which is dangerous on account of recurrence of the growth in situ, or by means of general metastases.

5. The fact that, according to Fuchs, the anterior ciliary veins are markedly engorged upon the sclera at a place which usually corresponds to the site of the tumor. This is due to the blocking of one or more vena vorticosa by the tumor and the consequent dilatation of the anterior veins to convey the excess blood outside.

6. The P32 Test.

With the increase of the tumor the detachment of the retina progresses until finally a total detachment may be present; then the eye becomes entirely blind.

The first stage, already described, lasts from six to twelve months, although occasionally it may be prolonged for several years.

Second or glaucomatous stage. The eye becomes suddenly inflamed and painful and presents the characteristic symptoms of a primary acute glaucoma: marked redness of the eyeball; dull edematous and insensitive cornea; shallowness of the anterior chamber; dilatation and immobility of the pupil, and very severe pain over the brow. Usually the media are entirely opaque, and no view is to be had of the fundus; or, in rare cases, a grayish reflex from the detached retina can be seen in the background.

The underlying cause of the secondary glaucoma is not, as might be supposed, the continuous growth of the sarcoma, because this is compensated by a decrease in the amount of vitreous; nor has it any direct connection with the size of the tumor. It does depend, however, on two factors: (1) the stasis in the choroid due to the compression of the venous outlets, and the consequent effusion of fluids; (2) the formation of the peripheral synechia which is originated by the pushing forward of the lens and iris by the hypertension.

In the third, fungous or extrabulbar stage, the sarcoma cells find exit through the anatomical apertures in the sclera, i.e., the entrance of the anterior and posterior ciliary vessels, the vena vorticosa, the ciliary nerves, or even the optic nerve. The tumor at this stage may not entirely fill the globe. When the growth is more active in the anterior part of the eye, and especially in the diffuse type, black, hard prominences may appear around the limbus to warn of the impending perforation; but if the sarcoma is more active behind the equator, the rupture of the sclera in the back of the globe cannot be detected, and it is only by the involvement of the neighboring tissues, the filling up of the orbit, and the appearance of an exophthalmus that the extraocular stage can be recognized.

After the rupture of the eyeball the tumor grows so fast that it protrudes out of the orbit as a fungous, ulcerated apple, or larger.

In the fourth or metastatic stage, the sarcoma cells carried by the blood-vessels

are transplanted to distant organs, especially the liver, spleen and lungs. In addition, the continual extension of the sarcoma may involve the brain and quickly produce death. The bleeding and suppuration from a fungous tumor exhaust the vitality, and the metastasis and cachexia usually end in death.

Course

It is not to be supposed that the four stages described always follow each other in succession. Metastasis in distant organs can be produced during the first stage, even before the sclera is perforated, and give rise to independent tumors. The first and second stages are of long duration, but afterwards the course of the disease is much more rapid. The metastases may remain undetected for years before death ensues.

Prognosis

Sarcoma of the choroid is a highly malignant disease, and the prognosis is usually bad unless the eye is removed early and even if this is done, metastases may be already present in some other part of the body. Recurrences in the orbit after early enucleation are exceptional, but metastases may have already occurred. Even if these remain unobserved for many years, they finally cause the patient's death.

Very vascular and round celled sarcomata are considered more malignant than the other types. In the majority of cases, metastases, if they occur, are fatal within three years of the enucleation; if the patient is free from metastases for more than four years, they are unlikely to occur, although they have been observed seven years and more after the operation.

Von Hippel published statistics in regard to the merits of early enucleation showing that of 132 cases followed for from five to thirty years, metastasis occurred in a larger proportion of those operated in the first stages (28 per cent) than in those operated in the second (19 per cent); not the time, then, but the malignancy of the tumor is the principal factor. He advises enucleation early when the other eye is sound, but in one-eyed persons he prefers waiting, if vision is still useful.

Treatment

Early enucleation, with a severing of the optic nerve as far back as possible, is to be advised in all cases of choroidal sarcoma. In the third stage, when the sclera is already ruptured, extenteration of the orbital contents and the periosteum is compulsory. Radium has been used in the socket after these operations. It is worth trying, but has not proved very reliable in preventing recurrences.

Discussion

Dr. James H. Allen (New Orleans): I wish to congratulate Dr. Gray on the presentation of an interesting and instructive paper.

Malignant melanomas of the choroid occur in greatest numbers in the fifth and sixth decades of life. However when allowance is made for the decreasing population in the older age groups the frequency of incidence actually increases with increasing age. The tumor is found more frequently in males than females but is extremely rare in Negroes.

The exact cause of the melanoma, as pointed out by Dr. Gray, is still unknown. However recent investigations would tend to indicate that these tumors may arise either from Schwann cells of the ciliary nerves or from the melanoblasts of the choroid. Furthermore, convincing evidence has been advanced to show that the melanoblasts of the choroid are of neuroectodermal origin. Therefore, "malignant melanoma" is replacing "sarcoma" in terminology of these tumors.

There is a definite correlation between the histopathologic characteristics, namely, cell type and argyrophil fiber content, and the degree of malignancy of these tumors. The usually reported ascending order of malignancy of the common types is spindle cell type A, spindle cell type B, fasicular, epithelioid, and mixed. However there is a tendency now to consider the epithelioid type as the most malignant, and when present in mixed types giving it an equally serious prognosis. The rare, pure melanophoroma probably is relatively benign. The death rate in the first five years after enucleation varies from 11 per cent for the spindle cell type A to 67 per cent in the epithelioid type. However it should be added that, in general, approximately 16 per cent of the survivors die between five and ten years after enucleation.

I should like to emphasize the dangers inherent in needle biopsies of these lesions. The possibility of obtaining falsely negative results as well as the dangers of local implantation and metastases from the procedure have eliminated it as a diagnostic method.

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Editorial

The American Medical Association's Program For The Health Care of The Aged

In the political history of this nation there has never been such concern over the health care of the aged as now. It might be inferred that in the past no one cared how the aged received care, or if they received any at all. The politicians, by research, might discover that for some centuries past the aged have been cared for and that this care was such as they may have arranged for themselves, or it may have been provided by relatives, or furnished within the limits of medicine as it then could be practiced — by the physicians. The same industrious research could also determine that the aged of America are now better cared for than at any period in history. Forty-nine per cent of those past sixty-five have prepayment medical care policies, varying in coverage from hospitalization to complete medical care.

The conviction of the average individual that he must provide for his old age has never been more widely accepted or more satisfactorily accomplished than now. The proposals being pushed by both political parties infer that almost all persons over 65 need health care and cannot afford it. This is a false premise. The truth is that the majority of our older people are capable of continuing a happy, healthy, and in many cases, a productive life. There are now about sixteen million persons in the nation over 65 years of age. Only 15 per cent are on Old Age Assistance. The medical needs of these are being met through the various welfare provisions.

The fact is that the politicians have discovered that the aged may have some sixteen million votes, and that in the last two decades the difference between the popular vote of the winning and losing candidates for president has varied from about 5 to 15 per cent of the total. In any one election a shift of 7 per cent of the total vote would determine the election. Sixteen million persons over 65 would constitute about 25 per cent of the total vote. If one half of these could be bought into either party

by a massive sickness care plan paid for out of taxes, such a plan could determine the outcome of the election. Resulting from this, there are five major proposals, involving some form of prepaid sickness insurance.

The Forand bill previously discussed in these columns leads in its socialistic provisions. The Administration plan differs in not being compulsory and in not being designed to take care of any but those receiving Old Age Assistance and those in a certain lower income group. Each of the proposed plans involves expenditure varying from three quarters of a billion a year to three billion. Each, by accretion, would ultimately bring about the establishment of state medicine. Since we have two socialist parties, and since there is no conservative party which can be of assistance in this crisis, the American Medical Association has proposed an eight-point program for the health care of the aged. It is outlined as follows:

1. **The Needy Aged.** These aged now receive health care through Old Age Assistance programs. Here the need is for better organized medical care programs including improved preventive medical care.

2. **The Near-Needy.** This is the group, whose size is indeterminate, who can meet ordinary costs of living but cannot pay for health care costs. The AMA supports a state-administered program of federal grants-in-aid to the states for the liberalization of existing Old Age Assistance programs so that the near-needy could be given health care without having to meet the present rigid requirements for indigency. A liberalized definition as **determined locally** would permit an expanded program and encompass the near-needy group.

3. **Facilities.** Better nursing home facilities for the long-term care of the aged. The American Medical Association supports federal programs for the provision of grants through the Hill-Burton mechanism to provide for new nursing home additions to existing hospitals.

4. **Voluntaray Health Insurance,** which has already covered 49 per cent of those past 65, and can be further expanded.

5. **Home Nursing Care.** The care of the aged patient at home is psychologically, medically, and financially desirable.

6. **Attitude Toward Aged.** A basic change in the attitude toward the aged must be brought about. Most persons over 65 are reasonably well and able to work. Elimination of compulsory retirement and permitting voluntary change of work is an essential part of the answer to this problem.

7. **Health Education.** Many older persons are unaware of the need for continuing healthful nutrition, and other practices that contribute to good health.

8. **The Purchasing Power of the Dollar.** One of the principal economic problems of the aged person in the last twenty years has been the constant and continuing erosion of the purchasing power of his pension benefits. Any government program to help the aged must be anti-inflationary and maintain the purchasing power of fixed pension and annuity benefits.

These provisions, except the second and the eighth, are dependent upon the care of the aged being regarded as a local problem. To the extent that big government and regimentation are allowed to control the health care of the aged to the same extent will it become perfunctory, inflexible, and approach the status of that given in a police state.

As the spokesman for American medicine, and with full knowledge that political medicine is bad medicine, whether it is applied to the aged or not, the American Medical Association has consistently opposed legislation of the Forand type bill and its competitors. Any laws passed in this field now will be for the political advantage of the party that can get the most votes. They will not serve the basic needs of the aged or the best interests of medicine. Such legislation should be arrived at after adequate study of what needs should

be met. The last six months of an election year is no time for such an undertaking. If each physician discouraged all legislation of this type under present circumstances, the best interests of the nation woud be served.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

AMA MIAMI MEETING

Many Louisiana physicians attended the 109th Annual Meeting of the American Medical Association at Miami Beach.

The weather was fine and everyone enjoyed both a social and scientific treat. The programs were well attended. However, the total attendance was greatly reduced due to a strike of some of the airplane companies and we believe some were kept away by the mere fact that Miami Beach was in close proximity to the revolutionary disturbance in nearby Cuba. These two factors, in our opinion, reduced the attendance by 2,500 to 3,000 visitors. Total registration, however, at noon Thursday with only a half a day remaining, numbered 19,107 and of this total 8,706 were physicians.

Dr. Charles A. Doan, dean of the Ohio State University College of Medicine and director of the Health Center in Columbus, was the recipient of the AMA 1960 Distinguished Service Award, one of medicine's highest honors.

The major subjects involving policy acted upon by the House of Delegates were Health Care for the Aged, relations with allied health groups and the most important in our opinion, relations with the National Foundation regarding their expanding program in establishing clinics for arthritis and birth defects, and pharmaceutical issues.

Many reports, resolutions, and comments on the health care of the aged were considered and the following statement was adopted as the official policy of the Association:

"Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the parish (county), the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government, in the above order. The determination of medical need should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

The House also urged the Board of Trustees "to initiate a non-partisan open assembly to which all interested representative groups are invited for the purpose of developing the specifics of a sound approach to the health service and facilities needed by the aged, and that thereafter the American Medical Association present its findings and positive principles to the people."

In connection with an educational program regarding the aged, the House declared that "the American Medical Association increase its educational program regarding employment of those over 65, emphasizing voluntary, gradual and individualized retirement, thereby giving these individuals not only the right to work but the right to live in a free society with dignity and pride."

The House of Delegates at the opening session was requested by Dr. Louis M. Orr, retiring president, to go on record as favoring more jobs for the aged, voluntary retirement and to institute a nationwide campaign against discrimination because of age, whether it be 40 or 65. Wholehearted approval was given to Dr. Askey's recommendation that State Medical Societies become better informed by more active participation in State Conferences and other planning activities prior to the White House Conference on Aging to be held in January 1961.

The House of Delegates took two actions on the pharmaceutical issues considered — one regarding mail order drug houses and the other on

the development and marketing of pharmaceutical products.

It was agreed by the House that the practice of mail order filling of prescription drugs is not in the best interest of the patient, and should not be sanctioned except in rare instances due to the geographical isolation of the patient. The direct personal relationship which is so essential to the health and welfare of the patient and which should exist between the patient-physician-pharmacist of the community level is lost.

The House also directed the Board of Trustees to request the Council on Drugs and other appropriate association councils and committees to study the pharmaceutical field in its relationship to medicine and the public after consultation with other interested groups or agencies and to submit its findings at its 1961 June meeting.

The following actions were taken on the National Foundation:

The House took two actions involving relations between the medical profession and the National Foundation. It adopted a statement of policies for the guidance of state medical associations and recommended that they be adopted by all component medical societies. These policies cover such subjects as membership of medical advisory committees at the chapter level, the function of these committees, and basic principles concerning financial assistance for medical care, payment for physicians' services and physicians' responsibilities for constructive leadership in medical advisory activities.

In another action the House directed the Board of Trustees to authorize further conferences with leaders in the National Foundation on the problem of poliomyelitis as it relates to the betterment of the public health and to consider further joint action toward the eradication of polio. The House commended the National Foundation for its outstanding service in the attack against polio, but pointed out that much work remains to be done in public education, vaccination, continuing assistance for polio victims and continued research.

The revised statement on the "Scope, Objectives and Functions of Occupational Health Programs" originally adopted in June 1957, contains no fundamental changes in AMA policy or ethical relationship. However, it added important new material on the following points:

1. Greater emphasis on the preventative and health maintenance concepts of occupational health programs.

2. A more positive statement of organized medicine's obligation to provide leadership in improving occupational health services by part-time physicians in small industry.

3. Increased emphasis on rehabilitation of the occupationally ill and injured.

4. Inclusion of the proper use of immunization procedures for employes, as approved by the House in 1959.

5. A more adequate statement on the need for teamwork with lay industrial hygienists in tailoring each occupational health program to the particular employe group involved.

6. Encourage the employment of the physically handicapped.

The House approved the final report of the Committee to study the Relations of Medicine with Allied Health Professions and services and recommended that the Board of Trustees appoint a committee to continue this vitally important work, and further recommended that an effective continuing liaison should be established between A.M.A. representatives and professional and technical personnel.

In dealing with reports and resolutions on a wide variety of other subjects, the House also:

Strongly reaffirmed its support of the **Blue Shield concept** in voluntary health insurance and approved specific recommendations concerning A.M.A. - Blue Shield relationships;

Approved a contingent appointment of not more than six months for **foreign medical school graduates** who have been accepted for the September, 1960, qualification examination;

Agreed that the American Medical Association should sponsor a **second National Congress on prepaid health insurance;**

Approved a Board of Trustees request to the Postmaster General for a stamp commemorating the **Mayo Brothers;**

Decided that the establishment of a home for **aged and retired physicians** is not warranted at this time;

Approved the establishment of a new **"Scientific Achievement Award"** to be given to a non-physician scientist on special occasions for outstanding work;

Approved the following schedule for future **annual meetings:** Atlantic City, 1963; San Francisco, 1964, and New York City, 1965;

Approved the objectives of the A.M.A. **Commission on the Cost of Medical Care** established by the Board of Trustees and headed by Dr. Louis M. Orr, immediate past president of the Association;

Urged individual members of the Association to take a greater interest and more active part in **public affairs** on all levels;

Reaffirmed its opposition to compulsory inclusion of physicians under Title II of the Social Security Act and recommended immediate action by all A.M.A. members who agree with that position;

Called for a review of existing and proposed legislation pertaining to **food and color additives,**

with the objective of supporting appropriate measures which are in the public interest;

Urged reform of the **federal tax structure** so as to return to the states and their political subdivisions, their traditional revenue sources;

Asked state and county medical societies to make greater use of A.M.A. **recruitment materials** in presenting medicine's story to the nation's high schools;

Requested the Board of Trustees to initiate a study of present policy regarding required content and method of preparing **hospital records;**

Commended the Department of Defense and the Air Force for establishing and operating the **Aeromedical Transport Service** and urged that it be maintained at optimum efficiency;

Directed the Board of Trustees to develop **group annuity** and **group** disability insurance programs for Association members; and

Expressed grave concern over the indiscriminate use of **contact lenses.**

Addresses and Awards

Dr. Orr, in his final report to the House at the opening session, urged medical societies to "adopt" rural villages, cities and regions in undeveloped parts of the world and to send them medical, clinical and hospital supplies.

Dr. Asky, in his inaugural address Tuesday night, declared that medicine faces its greatest challenge in the decade ahead, adding that physicians must prove the effectiveness of medicine practiced in a free society. Dr. John S. Millis, Ph.D., president of Western Reserve University, Cleveland, Ohio, and guest speaker at the inaugural ceremonies, said the human dilemma of the sixties is an increasing desire for security and authority with a diminishing desire for responsibility.

At the Wednesday session of the House, Dr. Askey urged intensified, accelerated effort in five areas—medical education, preparations for the White House Conference on Aging next January, health insurance and third party relationships, mental health, and membership relations.

The Goldberger Award in Nutrition was presented to Dr. Richard Vilter of the University of Cincinnati. The Boy Scouts of America, celebrating its golden jubilee, presented the A.M.A. with a citation in appreciation of the medical profession's help and support. Dr. B. E. Pickett of Carrizo Springs, Texas, retiring chairman of the Council on Constitution and Bylaws, received an award in recognition of his long service.

Election of Officers

In addition to Dr. Larson, the new president-elect, the following officers were named at the Thursday session:

Dr. William F. Costello of Dover, N. J., vice-president; Dr. Norman A. Welch of Boston, re-elected speaker of the House, and Dr. Milford O. Rouse of Dallas, Texas, re-elected vice-speaker.

Dr. Gerald D. Dorman of New York City was elected to the Board of Trustees to succeed Dr. Larson, and Dr. James Z. Appel of Lancaster, Pa., was re-elected to the Board.

Elected to the Judicial Council, to succeed Dr. Louis A. Buie of Rochester, Minn., was Dr. James H. Berge of Seattle.

Named to the Council on Medical Education and Hospitals were Dr. William R. Willard of Lexington, Ky., succeeding Dr. James M. Faulkner of Cambridge, Mass., and Dr. Harlan English of Danville, Ill., who was re-elected.

On the Council on Medical Service the House re-elected Dr. Russell B. Roth of Erie, Pa., and Dr. Hoyt B. Woolley of Idaho Falls.

Dr. George D. Johnson of Spartanburg, S. C., was named to succeed Dr. Pickett on the Council on Constitution and Bylaws.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

KNOWING CAUSES HELPS PREVENT FOOD POISONING

The causes of food poisoning—a particular hazard in warm weather—were outlined in the Feb. 27 Journal of the American Medical Association.

An understanding of the causes is helpful in preventing the illness.

The main cause of food poisoning is bacteria which contaminates the food by multiplying or forming a poisonous substance. When eaten, the food produces acute illness of short duration.

Food poisoning caused by staphylococcic bacteria is "the most common type encountered in the United States," according to the Journal article.

When the bacteria is present, only time and the correct temperature are needed to cause an outbreak. At a warm temperature food can become poisoned in five to seven hours in some cases. The foods usually involved in this type of poisoning are ham, cream-filled bakery goods, cheddar cheese, dry skim milk, poultry, and potato salad.

The symptoms of staphylococcic food poisoning—nausea, vomiting, diarrhea, acute prostration, and abdominal cramps—appear within a few hours after the food is consumed.

Another bacteria that can cause food poisoning is salmonella.

"Salmonellae are abundant in nature and are found most commonly in the intestines of poultry and swine," the article said.

"They the present on the shell of eggs, and, when eggs are broken commercially, they find their way into frozen whole eggs, yolks, whites, and in dried egg products."

The foods usually involved in salmonella poisoning are inadequately cooked egg products, poultry, or other foods. The symptoms it produces are abdominal pain, diarrhea, chills, fever, frequent vomiting, and prostration.

Several other types of food poisoning can be caused by starch foods inadequately refrigerated and by poultry and meat products cooked and left unrefrigerated at a warm temperature for several hours.

A rare and often fatal type of food poisoning is botulism.

"In the United States the majority of outbreaks of botulism are related to the consumption of inadequately processed home-canned vegetables of low-acid content such as string beans, beets, and other vegetables," according to the Journal report.

The symptoms are difficulty in swallowing, double vision, difficulty in speech, and difficulty in respiration, followed by death from paralysis of the muscles of respiration.

The article was prepared by Dr. G. M. Dack, professor of microbiology and director of the Food Research Institute at the University of Chicago, as a report to the A.M.A. Council on Drugs.

NON-POLIO VIRUSES CONTRIBUTED TO DETROIT POLIO EPIDEMIC

Non-polio viruses played an important role in causing the 1958 Detroit polio epidemic, three Michigan researchers said recently.

Gordon C. Brown, Sc. D., Ann Arbor; Willard R. Lenz, M. D., Detroit, and George H. Agate, M. D., Lansing, made a comprehensive report on the epidemic in the Feb. 20 Journal of the American Medical Association, based on laboratory tests on 1,060 of the 1,200 cases.

The study involved "probably the greatest percentage of victims of a large epidemic of poliomyelitis ever to be subjected to laboratory investigation," the researchers said.

They found that two viruses, other than the polio virus, caused more cases of nonparalytic disease than the polio virus. They were the ECHO and Coxsackie viruses, of which there are

many types. This pointed up the need for a new vaccine.

"Since these viruses can apparently cause a paralytic type of disease in an occasional person, consideration should be given to the development of preventive vaccines for certain of these agents," they said. "This is especially important for pregnant women, in view of the increasing recognition of neonatal [newborn] deaths caused by Coxsackie B viruses. . . ."

The symptoms associated with ECHO and Coxsackie virus infections were virtually indistinguishable from those of nonparalytic polio, they reported.

"The occurrence of ECHO and Coxsackie virus infections was not influenced by poliomyelitis vaccination," they said.

However, the study "clearly shows that most of the virus-confirmed cases of poliomyelitis had occurred in persons who had received no poliomyelitis vaccine.

"This was apparent not only for the paralytic cases but also for those classified as nonparalytic."

On the other hand, examinations for muscle weakness 60 days after the onset of illness indicated there was no association between vaccination and findings of improved muscle condition.

The researchers further stated that an analysis of patients, both paralytic and nonparalytic, from whom no virus could be isolated strongly suggested that the polio virus was not the cause of illness "in a large number" of them.

The study also showed that virus-confirmed cases of polio occurred predominantly in younger persons while Coxsackie and ECHO virus infections were much more evenly distributed by age.

ULCER NOT RARE IN YOUTH; OFTEN UNNOTICED FOR YEARS

Junior could get a peptic stomach ulcer before his "old man." And if his father does develop the ailment, it may have started in his youth.

These are the conclusions of three Chicago physicians reported in the February American Medical Association Journal of Diseases of Children.

"Despite its relative infrequency, peptic ulcer in children should not be considered rare," they said.

"The true incidence of peptic ulcer in children cannot be evaluated on the basis of the recorded cases, since these undoubtedly represent a small fraction of the total number of children with the disease. In many cases, symptoms are entirely lacking and the condition is identified only at operation or autopsy."

The cause of peptic ulcer in children remains as obscure as its occurrence in adults, the researchers noted.

However, in the four cases of acute peptic ulceration among the 32 patients, cerebral damage and certain drugs may have been implicated as causative factors, they said.

Two patients, aged 6 and 7, developed acute peptic ulceration following a month's treatment with corticotropin, salicylates, and aspirin for rheumatic fever. But it could not be determined whether the drugs produced the ulcers, or irritated a susceptibility to ulcer, or whether rheumatic fever predisposed to peptic ulceration.

HOSPITALIZATION OF CHILD EASIER WHEN MOTHER GOES ALONG

The emotional shock that may occur when a child is hospitalized can be overcome when the mother stays with him, according to a New Haven Conn., pediatrician.

Writing in the February Journal of Diseases of Children published by the American Medical Association, Dr. Albert J. Solnit of the Child Study Center and department of pediatrics, Yale University, said "hospitalization of the child with the mother has served to overcome both physical and psychological difficulties.

"For young children and their parents, the hospital environment has represented a psychological hazard. The children are threatened by separation from their parents, fears of abandonment, and painful, frightening procedures in the hands of strangers.

"Since the mother may have the best access to the distorted fears of the young child, she can most effectively reassure her child. . . ."

Therefore, Dr. Solnit said, the mother is not replaced by the nursing or medical staff. On the contrary, he said, the physician and nurse help the mother take care of her child.

THINNING HAIR IN YOUNG WOMAN DOES NOT LEAD TO BALDNESS

Young women whose hair suddenly begins to fall out need have no fear they will be left looking like actor Yul Brynner.

Drs. William B. Guy and Walter F. Edmundson of Pittsburgh, writing in the February Archives of Dermatology published by the American Medical Association, said the condition is most likely temporary and can be treated successfully.

They said diffuse cyclic hair loss in women is "rather common" and is entirely different from permanent hair thinning that occasionally occurs in women in middle or late life.

"It occurs in transitory episodes, lasting for several weeks usually," they said. "The typical

patient is a vigorous otherwise healthy woman.

FUTURE MEETINGS

Seminar, "Advances in Pediatric Therapy" sponsored by Louisiana Chapter, American Academy of Pediatrics, and American Academy of General Practice, Friday, September 23, Roosevelt Hotel, New Orleans. Five hours credit as Category I.

Tennessee Valley Medical Assembly, Read House, Chattanooga, September 26-27, 1960. Dr. Robert A. Waters, 109 Medical Arts Bldg., Chattanooga, Chairman.

BOOK REVIEWS

The Reluctant Surgeon; a biography of John Hunter, medical genius and great inquirer of Johnson's England, by John Kobler. Doubleday and Company, Inc., Garden City, New York. 1960, pp. 359. Price $4.95.

Most doctors know of John Hunter. They generally know that he lived in England and they have heard that he is one of the greatest surgeons of all times, but few of them know why he is given this almost legendary distinction. This book by the editor of the Saturday Evening Post tells why in a very interesting manner. It is written so the general public can comprehend, but also so a doctor can admire and approve. Because of the depth and extensiveness of the research which went into its production, it seems accurate and not just appealingly fanciful. John Hunter, the youngest of a family of ten children, was born on February 13, 1728, in Calder Glen high above the Clyde valley near Glascow, Scotland. His father was a farmer. Poverty was the consent atmosphere and companion of his youth. Frugality, incessant toil, and strict religious doctrine influenced his early life. Schools were primitive and school masters abided in abject misery. John was not a good student; he skipped classes to observe fish and birds and cattle and this trend of tremendous interest in nature was a dominating spirit in his life. His older brother, William, ten years his senior, had gone to London and John followed him there in 1751 after the death of his father, having had only elementary schooling. John helped William Hunter do dissections, teach anatomy, and make experiments, crude in a way even in their day. John had no formal medical education. He became associated with St. George's Hospital in 1754. His practice, like that of his brother, grew and he had among others, such famous patients as James Boswell and his family, Sir Joshua Reynolds, and Thomas Gainsborough, and the youthful George Gordon Byron (for his club foot). He made money for his day, 6,000 pounds (about $15,000 a year), and he spent it in buying specimens of the greatest variety, including whales, tigers, birds, deer, and numerous other animals. He founded a museum out of personal interest, making comparative anatomic displays of skeletons and various other organs. This museum cost him, it is said, 75,000 pounds which is equivalent to about $200,000 today. He kept a variety of animals around his home, had a large dissection room and preparation room. He dissected from bees to bears, alley cats to marsupials, and even whales on barges in the Thames. The museum after his death was bought by the government and placed under the care of the Royal College of Surgeons. This is one of the greatest museums ever assembled and it is nicely described in the story by Kobler. All but 3,000 of Hunter's original 13,682 specimens were destroyed when the Museum of the Royal College of Surgeons was hit by high explosive shell, and then by an incendiary bomb, in the Second World War. At that time the Museum consisted of 66,000 specimens and two-thirds of these were lost.

Hunter not only studied comparative anatomy and wrote fundamental truths with respect to it long in advance of his time, but he did such experiments as ligating the carotid artery on a stag and noted the diminished growth of the horn on that side. When colateral circulation was re-established the stag horn began to grow again like that on the opposite side. This experiment influenced him to ligate the femoral artery in its fascial compartment (Hunter's Canal) at the lower third of the thigh for aneurysm of the popliteal artery. He wrote an account of the hearing organ in fish, an exhaustive book on the natural history of teeth, published studies on gunshot wounds and numerous other subjects. He wrote voluminously, much of it unpublished. Everard Home, his brother-in-law, in some respects his student and successor, committed the crime of destroying many of his unpublished papers after publishing some of them as his own.

John Hunter is known also as a physiologist, an anatomist, a naturalist, and, not the least, as an exhaustive, tireless worker. It is said he slept only four hours a night and he persistently pursued his consuming interest in anatomy, physiology and surgery day after day throughout his life. He changed the state of surgeons from an

ill-respected empirical craft to a profession of true science. He strove for truth and accuracy. The title "reluctant" comes from his statement that a surgeon should be reluctant to do an operation and should never perform one unless, under similar circumstances, he would wish one done for himself.

The environment of John Hunter's life; Scotland with its poverty and austerity; London with the rough and tumble strife; hospitals, primitive as they were, the disgusting degradation of nurses and nursing care, are interestingly described. The liaison between America's first medical school and the Hunters in London is recalled. The University of Pennsylvania Medical School was founded in 1765 by Dr. John Morgan who had studied a year under John Hunter and who had qualified for his M.D. degree at the University of Edinburgh. William Shippen, who also had studied with the Hunters, felt that he had been the originator of the medical school plan because he had started teaching anatomy and obstetrics. He was elected Professor of Anatomy on Morgan's recommendation but he never stopped conspiring against Morgan.

John Kobler has done a remarkably good job of writing this book interestingly, authoritatively, and in a manner that suits professional dignity. There are very few places in it where the material seems to be padded. Most of the extraneous material is really good background description. The story of a woman who gave birth to rabbits, a rather prolonged criminal story of the conviction of Donellan at whose trial John Hunter testified, seemed too extraneous and rather digressions from the real story, but I have no doubt that they will have their appeal to popular fancy.

John Hunter died in 1793. He had a luetic aneurysm and angina pectoris. The lues was self-inflicted for experimental purposes.

The British surgeons and surgeons the world over look up to this man and I am sure most of them will be pleased to have their attention called to this interesting biography.

HOWARD MAHORNER, M. D.

Tabulating Equipment and Army Medical Statistics; by Albert Love, E. L. Hamilton, and I. L. Hellman, Washington, D. C., Office of Surgeon General, 1958, pp. 202. Price $2.00.

The book is well bound, neatly printed, and generally pleasant to follow.

The authors have compiled a very readable and interesting history of the development and very early usage of machine records facilities. There is no other general source for this knowledge.

The usefulness of the document to practicing physicians or to health departments is apparently seriously curtailed by the omission of modern machine record processes, the application of fully automatic desk calculators and computing machines, and the utilization of modern facilities for communication such as automatic closed wire or radio transmission of numerical data to computing centers.

I believe this criticism would have been inappropriate with another title for the book to indicate its historical nature.

There is indeed a dearth of reference works available devoted to the topic of development of the field of medical statistical research and to these ends the book appears to be a contribution to the literature.

ROBERT LEWIS, M. D.

Diseases of Metabolism 4th Edition; Edited by Garfield G. Duncan, M. D., W. B. Saunders Company, Philadelphia, 1959, pp. 1104. Price $18.50.

The fourth edition of this comprehensive text book maintains the high standards of previous editions. Each chapter is written by an expert in his respective field and accordingly can serve as an authoritative reference. In most instances chapters have been revised extensively to include new knowledge and evaluate current concepts. Subjects considered include protein, carbohydrate, lipid, mineral, vitamin and porphyrin metabolism. Other topics discussed are undernutrition, obesity, gout, glycogen storage disease, hypoglycemia, melituria, diabetes insipidus, and diseases of the kidney and thyroid gland. The excellent chapter on diabetes mellitus written by the editor includes detailed consideration of complications, newer aspects of therapy and many practical suggestions for management. The discussion of vitamins and avitaminoses is disappointing in that few recent findings have been included and certain aspects of the subject have not been evaluated critically.

Extensive references are given at the end of each chapter. These shoud prove most helpful to students wishing to explore a subject in more detail. This volume should be a valuable addition to the library of any medical student or practicing physician.

GRACE A. GOLDSMITH, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: A Doctor In Many Lands, The Autobiography of Aldo Castellani.

Lea & Febiger, Phila.: A Primer of Electrocardiography, by George E. Burch, M.D., and Travis Winsor, M.D. (4th edit.)

W. B. Saunders Co., Phila.: Edema, Mechanisms and Management, A Hahnemann Symposium on Salt and Water Retention, edited by John H. Moyer, M.D., and Morton Fuchs, M.D.

Vantage Press, Inc., N. Y.: Thoracic Surgery Before the 20th Century, by Dr. Lew A. Hochberg.



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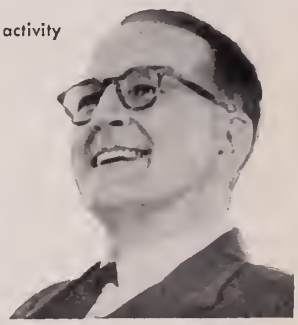
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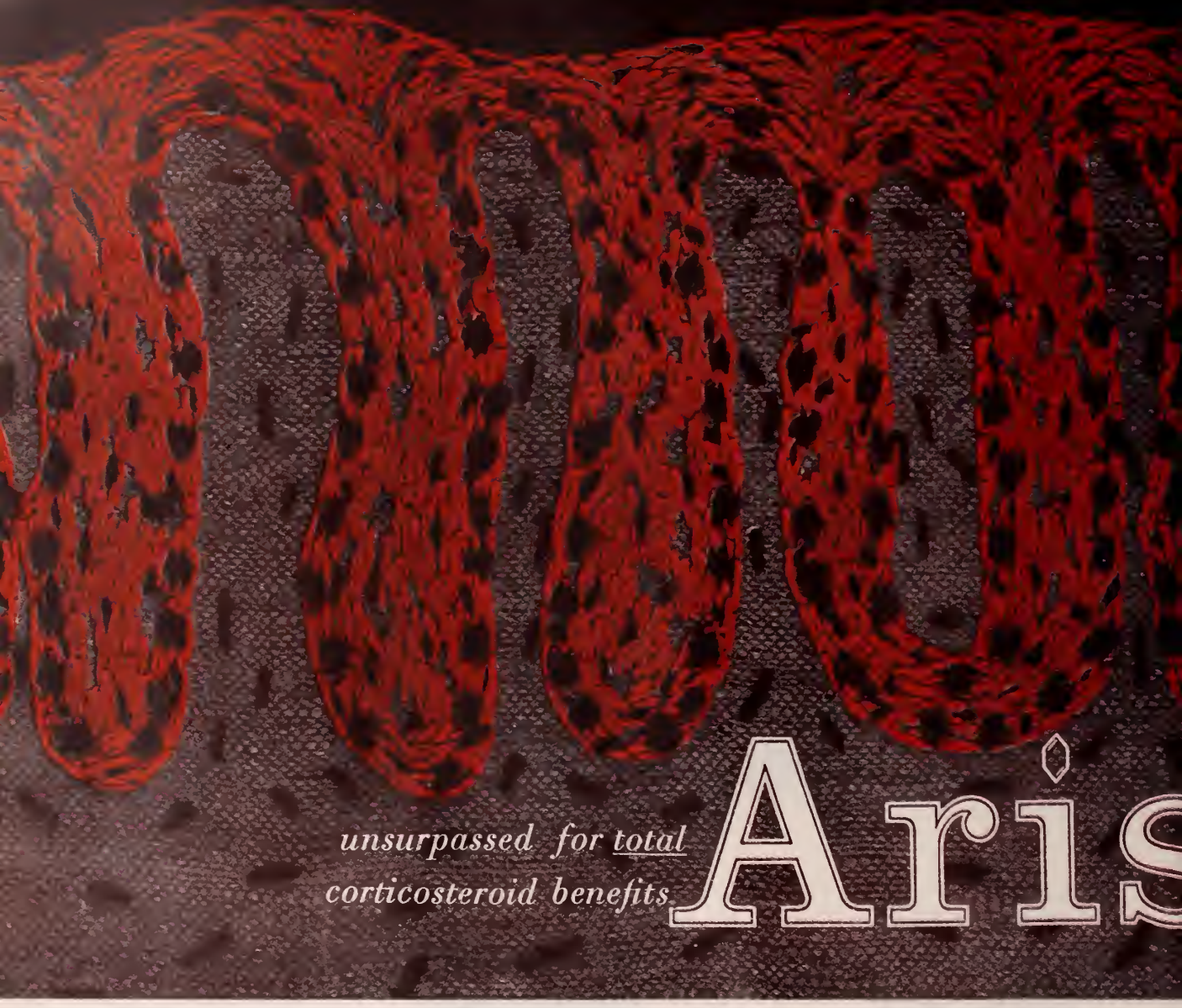
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REFERENCES: **1.** Gifford, R. W., Jr., *In* Hypertension, ed. by J. H. Moyer, Saunders, Philadelphia, 1959, p. 561. **2.** Moyer, J. H.: *Ibid.* p. 299. **3.** Brodie, B. B.: *In* Hypertension, Vol. VII, Proceedings Council for High Blood Pressure Research, Am. Heart Assn., ed. by F. R. Skelton, 1959, p. 82. **4.** Wilkins, R. W.: Ann. Int. Med. 50:1, 1959. **5.** Freis, E. D.: *In* Hypertension, ed. by Moyer, *op. cit.*, p. 123. **6.** Ford, R. V., and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959. **7.** Fuchs, M., and Mallin, S. R.: Int. Red. Med. 172:438, 1959.

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Source: Harrison, T. R., *et al.:* Principles of Internal Medicine, ed. 3, New York, McGraw-Hill Book Co., 1958, p. 620.

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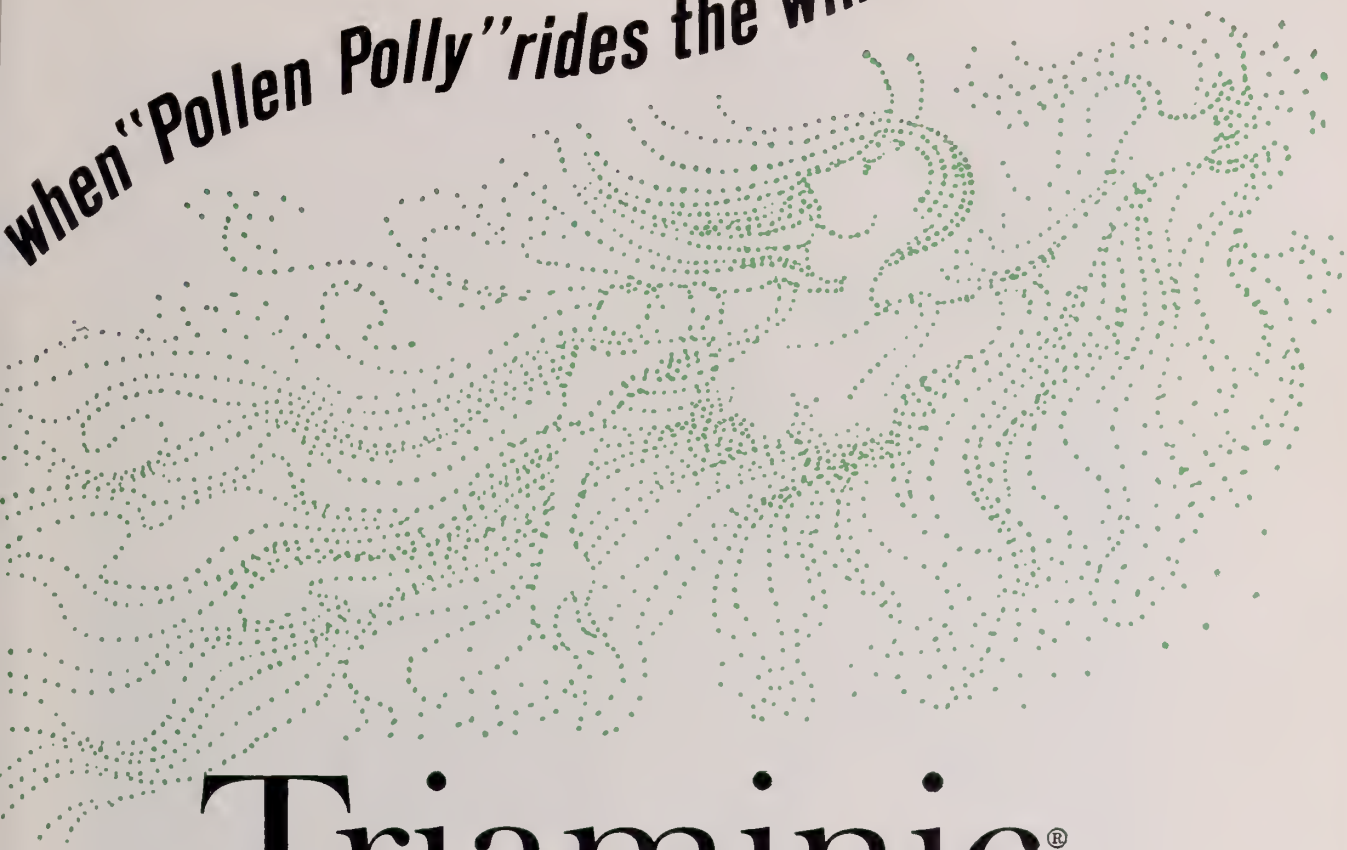
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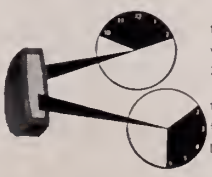
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References: 1. Fabricant, N. D.: E. E. N. T. Monthly **37**:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4 Fuchs, M.; Bodi, T., Mallen, S. R; Hernando, L., and Moyer, J. H.: Antibiotic Med. & Clin. Ther. **7**:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy **18** 36 (Jan.) 1960.

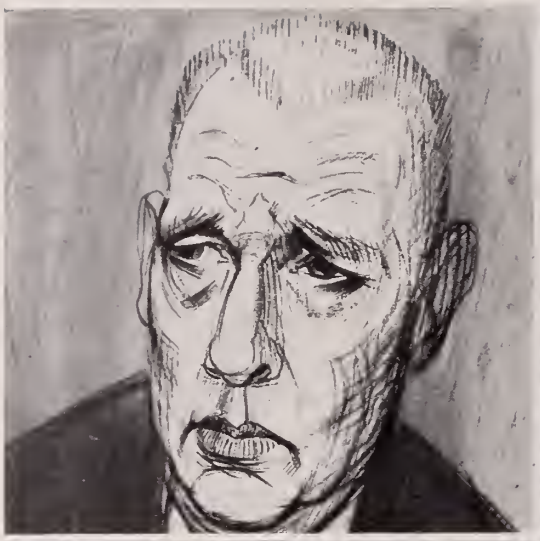
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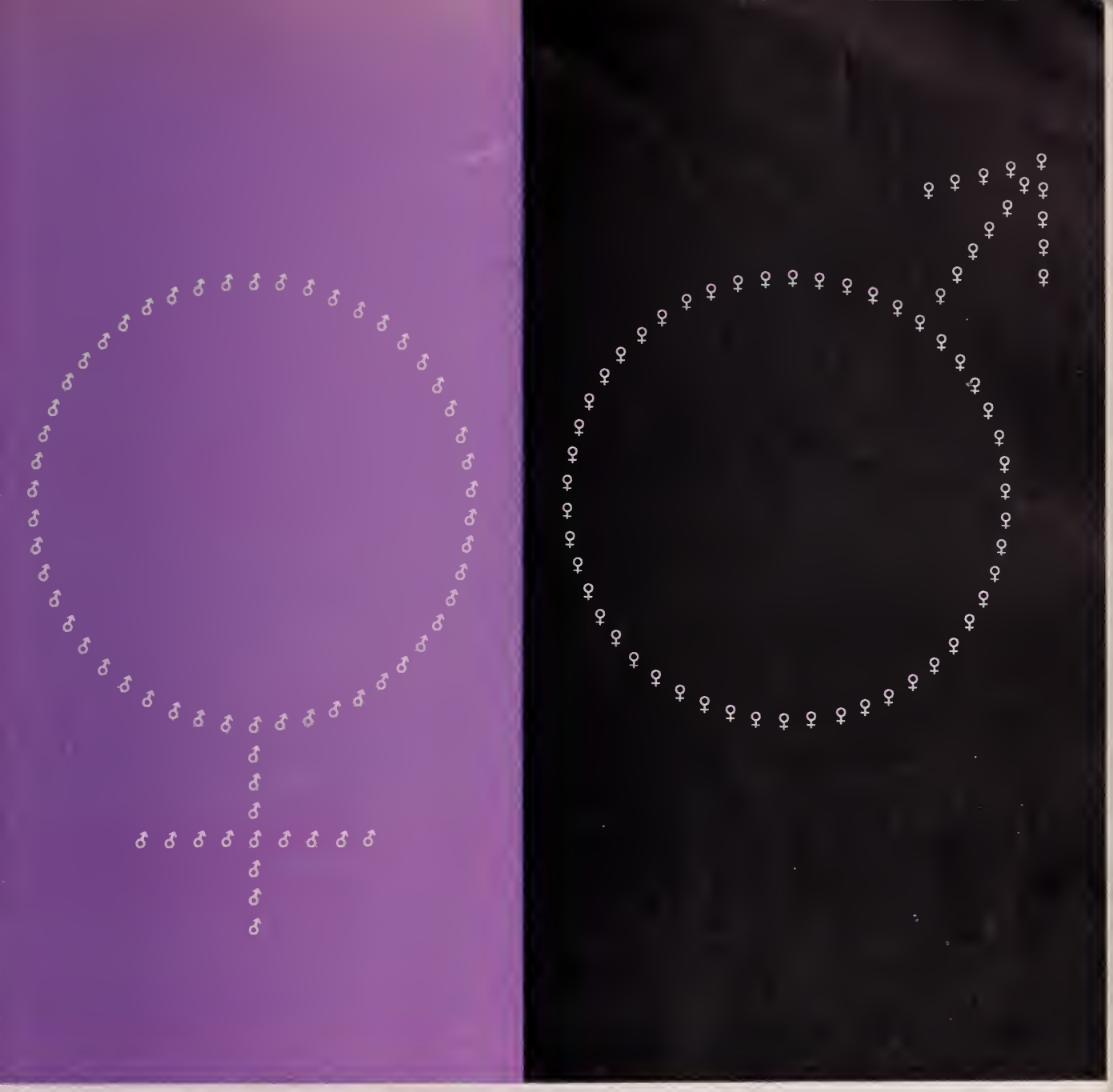
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* Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. 6:108 (Feb.) 1959.

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A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

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specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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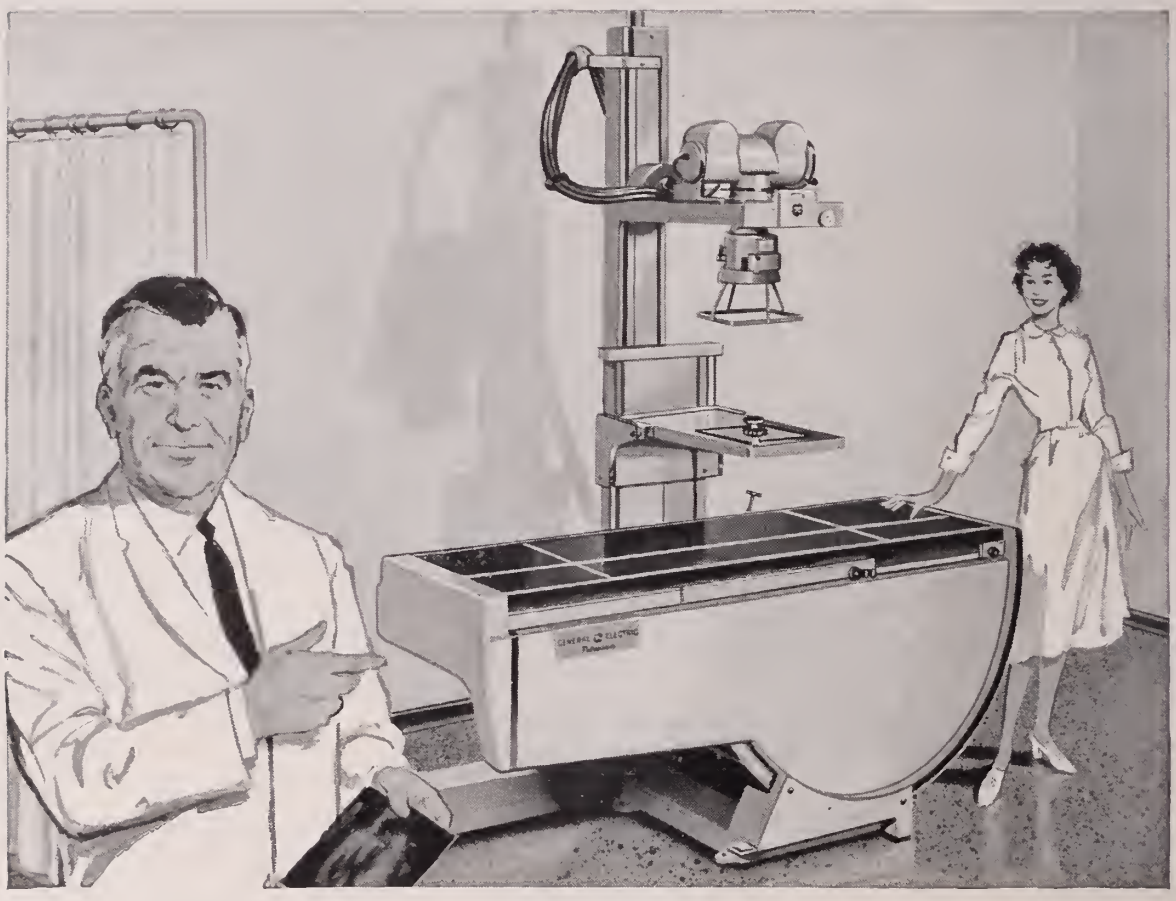
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1. Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

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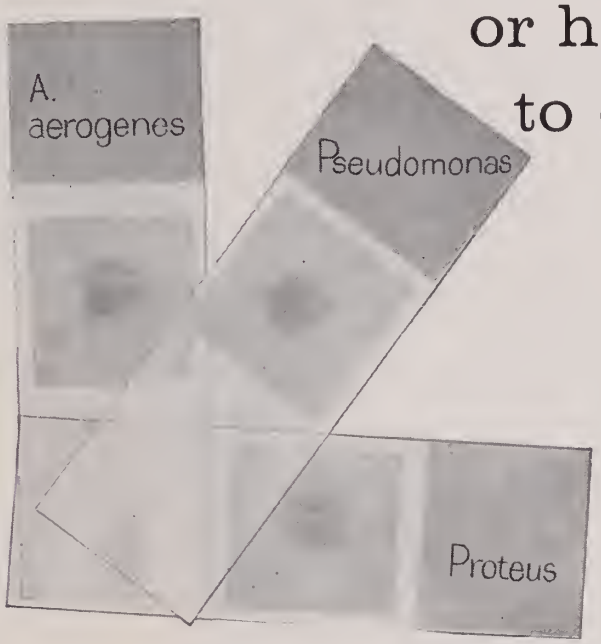
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1. Finland, M.; Hirsch, H. A., and Kunin, C. M.: Read at Seventh Annual Antibiotics Symposium, Washington, D. C., November 5, 1959. 2. Hirsch, H. A.; Kunin, C. M., and Finland, M.: **München. med. Wchnschr.** To be published. 3. Roberts, M. S.; Seneca, H., and Lattimer, J. K.: Read at Seventh Annual Antibiotics Symposium, Washington, D. C., November 5, 1959. 4. Vineyard, J. P.; Hogan, J., and Sanford, J. P.: **Ibid.**

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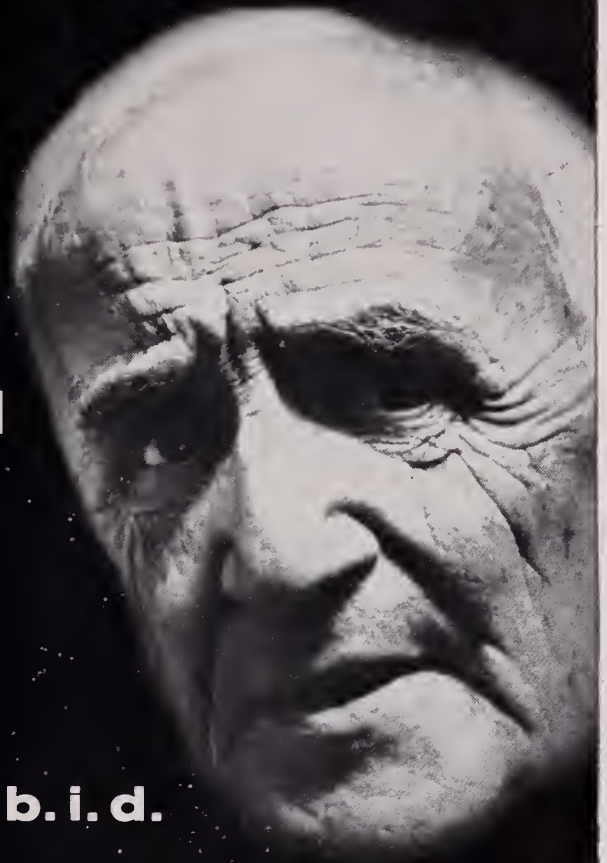
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References: 1. Asbell, N. and Tanyol, H.: The Use in Older Patients of an Antihypertensive Compound Incorporating Rauwolfia and Veratrum in Spaced-Release Form, Proceedings of the Symposium on Hypertension of the Richmond Academy of General Practice, Richmond, Virginia, October 20, 1959, p. 15. 2. Raines, D.S.: Clinical Experience with Spaced-Release Combination of Rauwolfia and Veratrum Alkaloids, ibid., p. 35.

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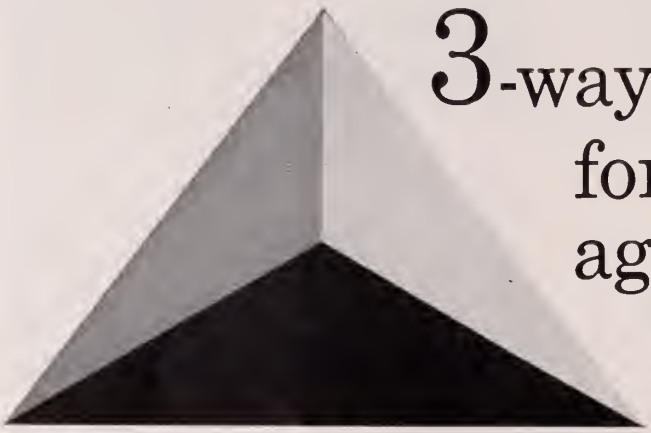
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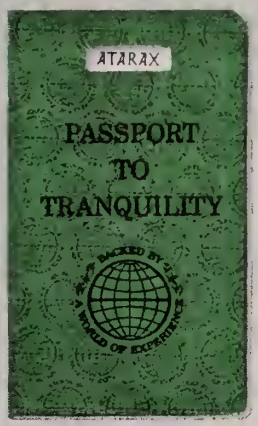
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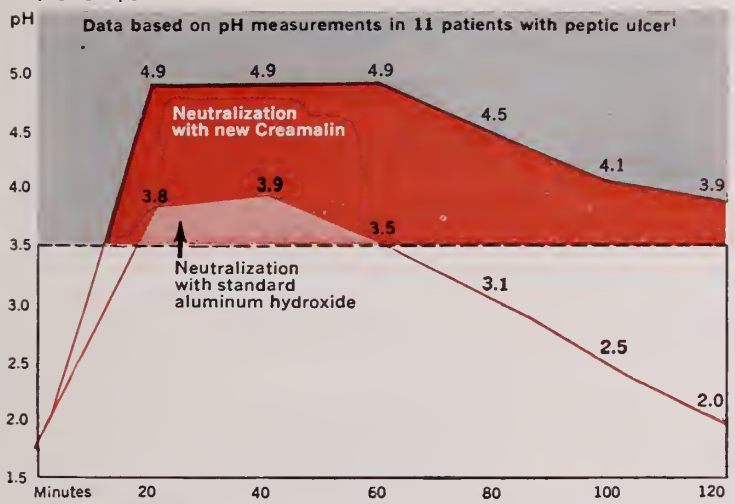
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1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

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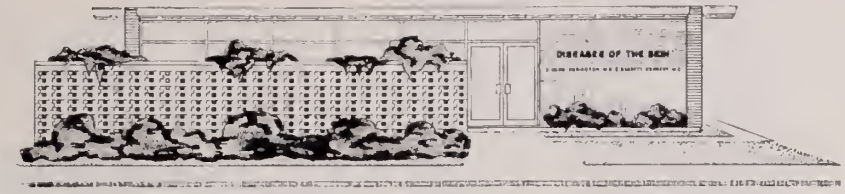
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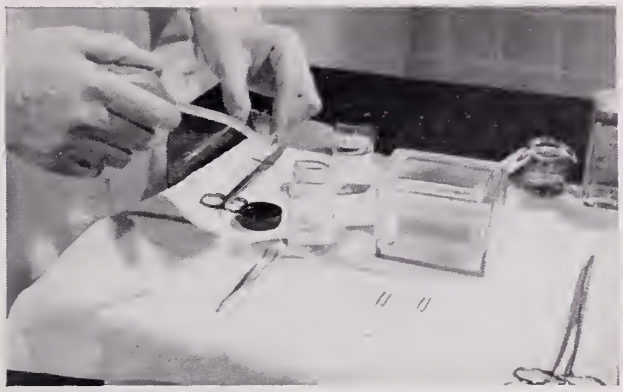
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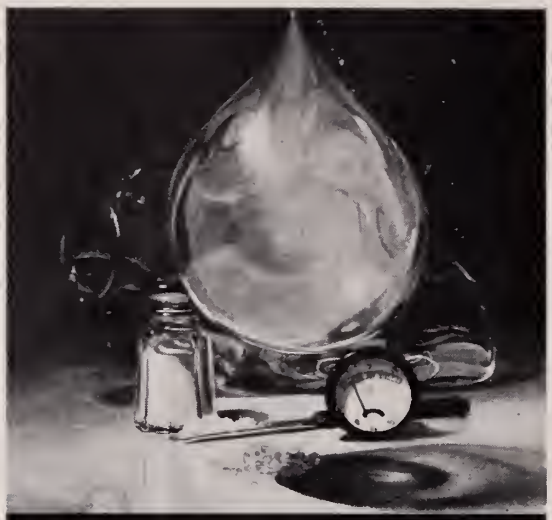
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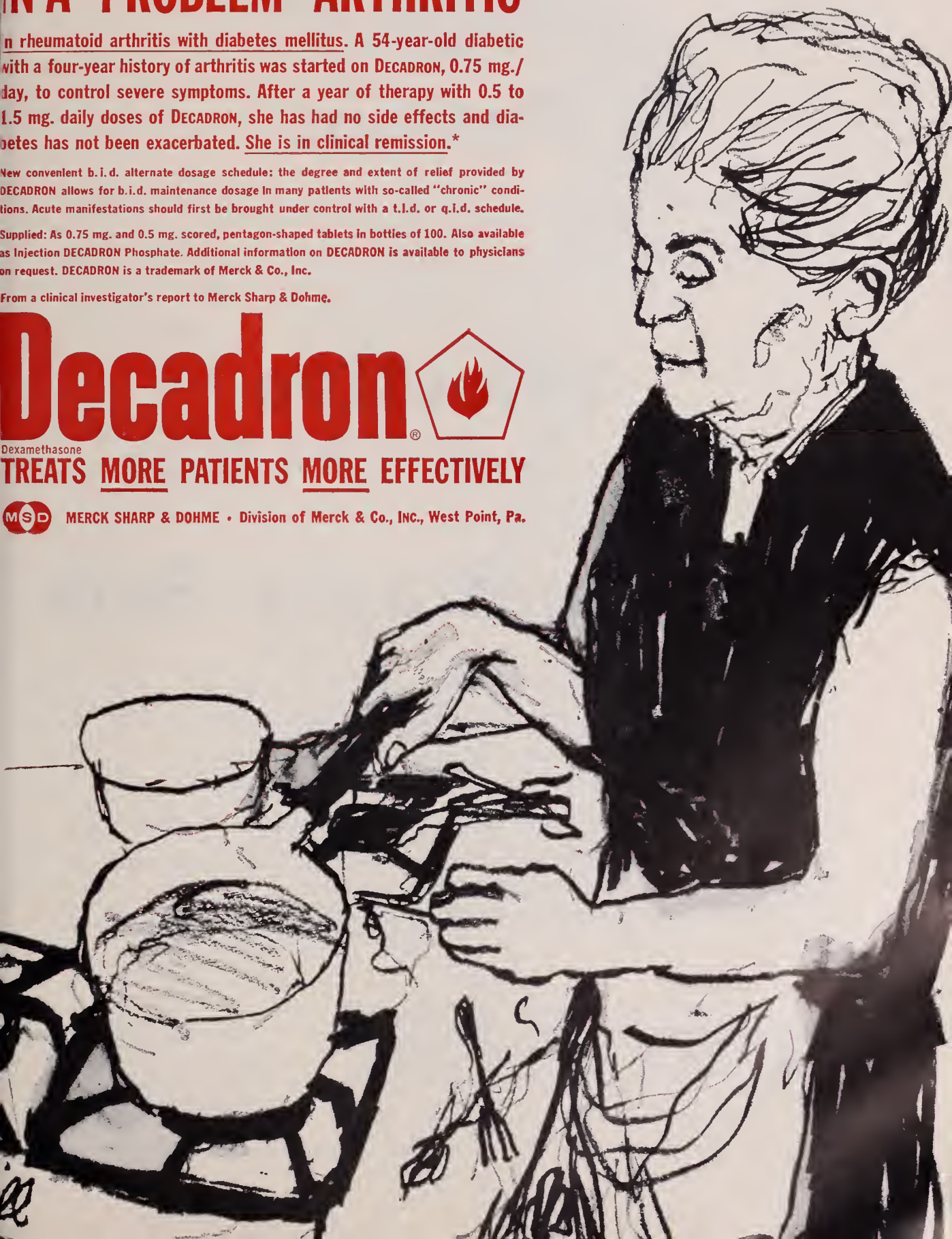
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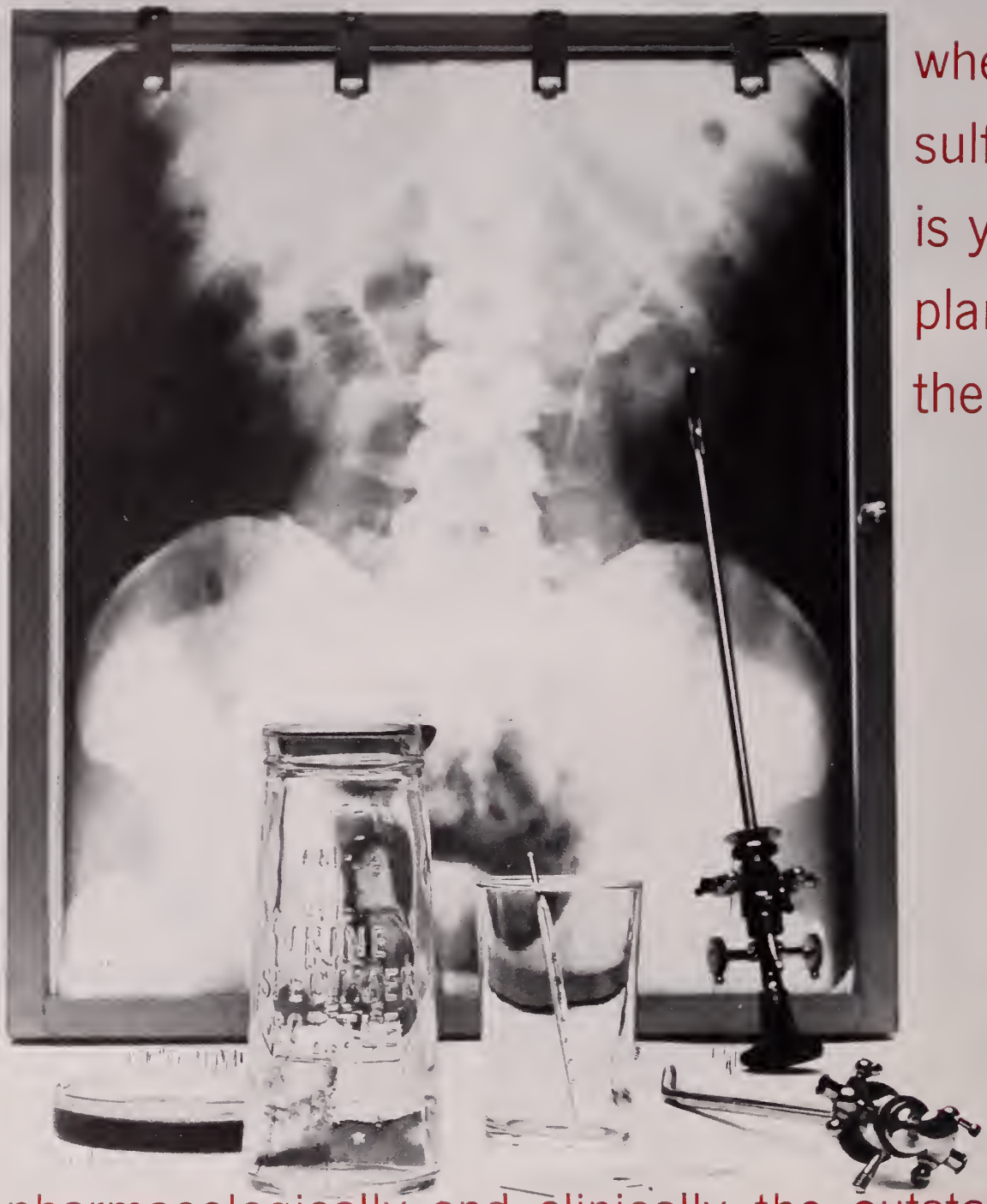
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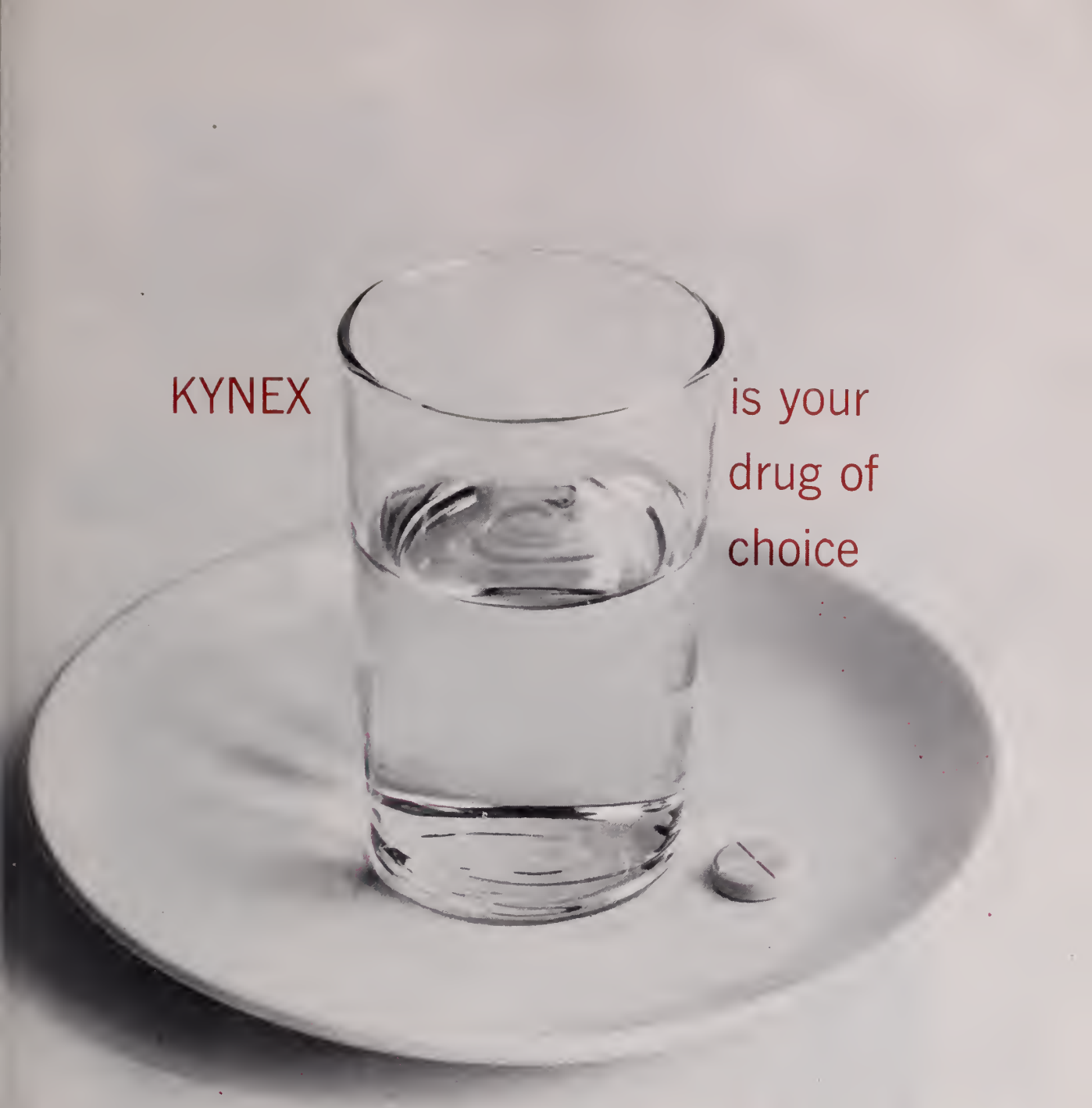
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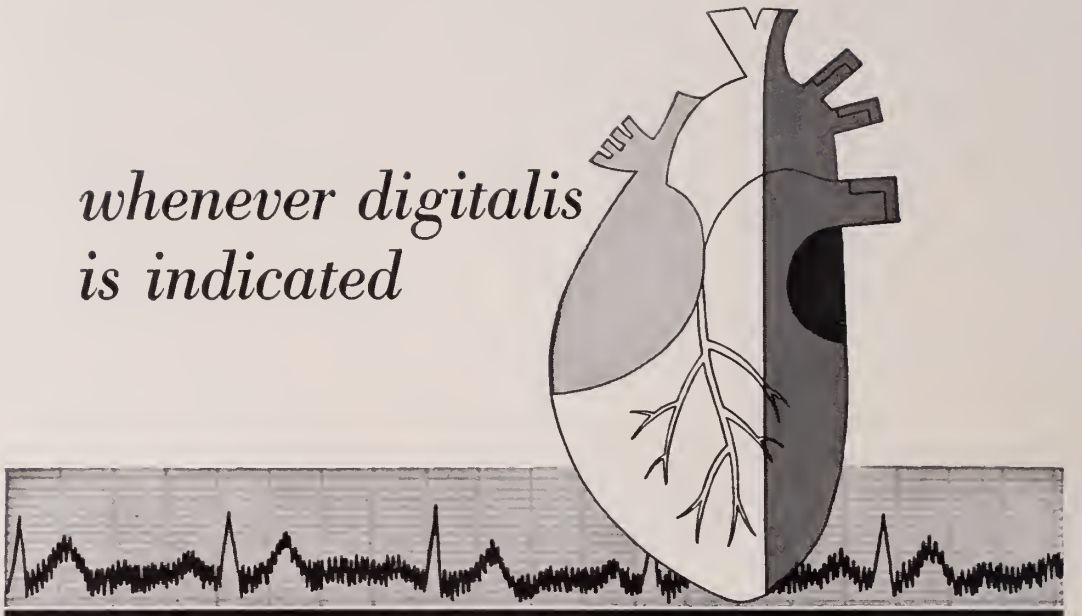
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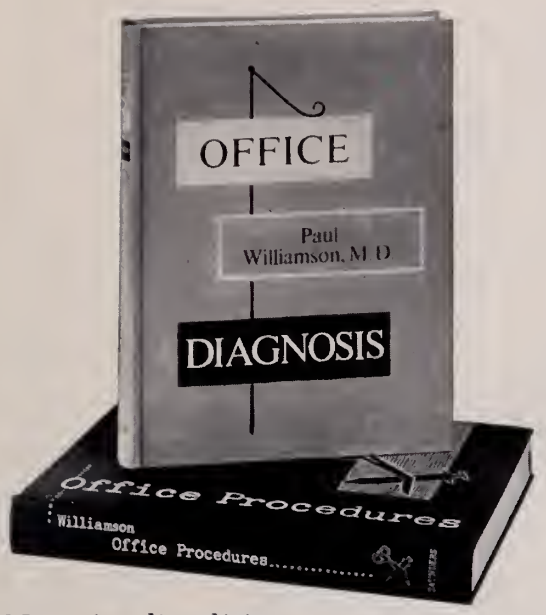
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AUGUST, 1960

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The Surgical Management of Carcinoma of the Pancreas And Periampullary Region*

• Pancreatoduodenectomy is the treatment of choice and although the mortality remains high, it has been significantly reduced in recent years. An increasing number of patients live five years or more following surgery.

GEORGE L. JORDAN, JR., M.D.
Houston, Texas

WITHIN a radius of 2 cm. from the major duodenal papilla, cancer may arise from four sites. The most common lesion is carcinoma arising in the major pancreatic ducts, accounting for approximately 80 per cent of the malignancies in this region. Second in frequency is carcinoma of the ampulla of Vater, while lesions of the duodenum and common bile duct are rare. Each of these cancers may cause jaundice due to obstruction of the common bile duct by direct invasion or pressure. Differentiation from intrahepatic jaundice must be made, but one should attempt to establish the diagnosis of extrahepatic obstruction as quickly as possible, for obstructive jaundice is a relative surgical emergency. A prolonged period of preoperative observation may allow the development of liver damage secondary to chronic obstruction, thereby increasing the operative risk. Furthermore, during such a period of observation, metastases may occur.

Most patients do not have distant metastases which preclude abdominal exploration; in a recent survey of patients treated in the Baylor Affiliated Hospitals, operation was performed in 78 per cent of those with pancreatic lesions. The majority, however, had intra-abdominal metastases or local invasion of adjacent structures found at the time of surgical intervention, so that only a palliative procedure was performed (Table 1). In most instances, palliation is accomplished by decompression of the biliary tree. A number of techniques have been described, and there are theoretic considerations which suggest that some techniques are preferable to others. Experience indicates, however, that the important consideration is construction of the anastomosis in the biliary tract proximal to the point of obstruction. Of particular importance in this respect is the fact that the cystic duct is occasionally occluded by the tumor so that

* Presented at the Eighteenth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, in Baton Rouge, La.

Cora & Webb Mading Department of Surgery, Baylor University College of Medicine, and the Veterans Administration, Jefferson Davis and Methodist Hospitals, Houston, Texas.

TABLE 1
TREATMENT OF CARCINOMA OF THE HEAD OF THE PANCREAS

Procedure	Pts. No.	Treated Per Cent
No Operation	19	22
Abdominal Exploration	13	15
Biliary Diversion	27	30
Biliary Diversion plus Gastroenterostomy	7	8
Gastroenterostomy	4	5
Resection	18	20
Pancreatoduodenectomy	16	18
Total Pancreatectomy	2	2
TOTAL	88	100

a cholecystic anastomosis will not decompress the biliary tree. If decompression of the biliary tree is accomplished, any of the anastomoses commonly used will provide palliation. In some instances, invasion of the duodenum or antrum of the stomach produces obstruction of such a degree that gastroenterostomy will be necessary. The need for this procedure may be ascertained with a high degree of accuracy, so that the routine use of gastroenterostomy, as has been advocated by some, is not necessary.[8]

The important decision at the time of operation concerns the possibility of radical resection of the tumor by pancreatoduodenectomy. There was a wave of enthusiasm for the use of this procedure following the description of the first successful resection of a lesion involving the ampulla of Vater by Whipple in 1935.[14] With the passage of time, it became apparent that the results following the utilization of this procedure varied with the lesion being treated. Thus, the results in the treatment of carcinoma of the head of the pancreas were relatively poor, as were the results with carcinoma of the duodenum and carcinoma of the common bile duct, while the results of treatment of lesions of the ampulla of Vater were good. Because of these observations, a period followed in which there was reluctance to perform pancreatic resection except in those patients with lesions of the ampulla of Vater; and this is the opinion of many surgeons today. Increasing experience, however, indicates that pancreatoduodenectomy is the treatment of choice for all lesions in this area, for, whereas the results are not striking, this procedure produces the best chance of long-term survival. In a recent review of the literature by the author it was possible to find a total of only 6 patients with histologically proven carcinoma of the pancreas treated by any means other than pancreatoduodenectomy who had survived five years or longer, while 21 patients treated by pancreatoduodenectomy for adenocarcinoma of the pancreas had survived more than five years.[5]

To assess the experience with this procedure in the Baylor Affiliated Hospitals, the records of all patients treated between January 1949 and January 1960 have been revived.

Clinical Material

A total of 47 pancreatoduodenal resections were performed by the resident and senior staffs of the Baylor Affiliated Hospitals in this eleven-year period. Twenty-four pancreatic tumors were resected, of which 21 were adenocarcinomas, 2 were islet cell carcinomas, and 1 was a cystadenocarcinoma. An analysis of the entire experience with pancreatic carcinoma in the Jefferson Davis and Veterans Administration Hospitals for a ten-year period, ending December 1958, revealed that 18 per cent were treated in this manner (Table 1). In contradistinction, almost 80 per cent of the lesions of the ampulla of Vater were treated by resection. Despite the relative infrequency of lesions of the duodenum and common bile ducts, 5 patients with duodenal and 3 with bile duct cancer were candidates for resection.

Mortality

The highest operative mortality rate occurred in patients treated for cancer of the common bile duct, but the number of patients treated was so small that this figure cannot be compared with other groups (Table 2). The lowest operative mortality rate, 13 per cent, followed the treatment of carcinoma of the ampulla of Vater. The over-all mortality rate of 19 per cent is representative of that in most other clinics in the United States.

TABLE 2
PANCREATODUODENAL RESECTION
OPERATIVE MORTALITY

Site of Lesion	Patients Treated	Postoperative Deaths Number	Per Cent
Pancreas	24	4	17
Ampulla of Vater	15	2	13
Duodenum	5	1	20
Bile Ducts	3	2	67
TOTAL	47	9	19

An analysis of the causes of death reveals that 8 of the 9 deaths could be directly attributed to intra-abdominal complications. Two patients had pancreatic fistulas, 1 a biliary fistula, and 1 a gastric fistula. Two additional patients had pancreatic fistulas, as well as intra-abdominal or gastrointestinal hemorrhage. Two patients died of intra-abdominal hemorrhage. The ninth patient died of renal failure.

Late Results

Cancer of the Pancreas: Fifteen of the 20 patients who survived resection died in the late postoperative period; however, 1 of these patients lived for four years, eleven and a half months, before dying of recurrent disease, and another lived for four and a half years, dying of unrelated causes. No gross tumor was discerned at necropsy, but residual malignancy was found on microscopic examination of lymph nodes. No symptoms referable to this residual tumor had been noted prior to death.

Two of the 5 surviving patients were treated for islet cell carcinoma. Both are alive, but one has suspected recurrence eighteen months postoperatively. Of the remaining 3, treated for adenocarcinoma, 2 have been followed for less than one year, but are alive and well. The third is of particular interest, for he had resection of a second primary carcinoma, a lesion of the colon, fifteen months after the pancreatoduodenectomy. This patient is alive without evidence of recurrence of either tumor three years and eight months after treatment of the pancreatic tumor, and two years and five months after treatment of the colonic cancer (Table 3).

Comment: To date, there have been no patients treated for pancreatic carcinoma in our hospitals who have survived five years; nevertheless, the results are encouraging, for three patients (15 per cent) lived for more than three years postoperatively. The longest survivor in our hospital with a histologically proven lesion not treated by resection has been only 13 months. Encouraging results have been reported by Waugh and Giberson,[13] a five-year survival rate of 15.8 per cent, and Cattell, Warren and Au,[1] who reported a five-year survival rate of 9.0 per cent. Thus, the results are gradually approaching the survival rates often reported in cancer of the stomach.

TABLE 3
PANCREATODUODENAL RESECTION
LATE RESULTS

Site of Lesion	No. Patients Surviving Operation	Late Deaths No.	Per Cent	Surviving No.	Per Cent
Pancreas	20	15*	75	5	25
Ampulla of Vater	13	8	62	5	38
Duodenum	4	1	25	3	75
Bile Ducts	1	1†	100	0	0

* 2 patients survived more than 4½ years.
† Lived 5½ years.

Cancer of the Ampulla of Vater: Five (39 per cent) of the 13 patients who survived resection are alive without evidence of disease. Two have been followed for less than one year, but 3 have lived for three, four, and nine years, respectively.

Comment: It is well-known that lesions of the ampulla of Vater grow more slowly than lesions of the pancreas, so that survival for two or three years following treatment is not uncommon, even after procedures of lesser magnitude.[10] Survival for five years and over, however, has been recorded only rarely, except following radical resection. As noted previously, the best results following pancreatoduodenectomy have been for treatment of these lesions. Rhoads and Zintel [11] have reported a five-year survival rate of 50 per cent; Waugh and Giberson,[13] a five-year survival rate of 38.4 per cent; and Cattell, Warren and Au,[1] a five-year survival rate of 36.3 per cent.

Carcinoma of the Duodenum: Three of the 4 patients surviving resection are still

alive. Two have been followed less than one year, and 1 of these has recurrence. The third is alive and well over three years postoperatively.

Carcinoma of the Common Bile Duct: The one patient to survive surgery lived more than five years, ultimately dying of tuberculosis and a choledochojejunocolic fistula, which was not recognized prior to death.

Comment: Until recently, the prognosis for carcinoma of the duodenum and carcinoma of the common bile duct has been considered extremely poor, but reports by Cattell, Warren and Au, Rhoads and Zintel, Porter, and Waugh and Giberson, lend a more encouraging note.[1, 11, 9, 13] It is now recognized that lesions in the duodenum vary greatly in their degree of malignancy, from polypoid, well-differentiated, slowly growing tumors to highly anaplastic invasive tumors. The prognosis following the treatment of the polypoid lesion is good.

Discussion

One of the objections frequently voiced concerning pancreatoduodenectomy is that the mortality rate is too high. Many physicians seem to overlook the fact that the mortality rate following palliative procedures in the treatment of carcinoma of the pancreas is as high as that following resection. In the current series the operative mortality rate for palliative procedures was almost 25 per cent, as compared to a mortality rate of 17 per cent for resection. This experience is similar to that of others. Admittedly, the patients who are the best operative risks are chosen as candidates for resection, therefore, the figures are not entirely comparable. Nevertheless, they support the contention that pancreatoduodenal resection does not add greatly to the risk of surgery. Furthermore, it would appear that the mortality rate can be reduced by proper selection of patients and by careful operative technique.[1, 12, 13] Some recent reports include operative mortality rates of less than 15 per cent for all resections, approaching the operative mortality rates of major resective procedures for carcinoma of the stomach and lungs.[1, 8, 13] In the treatment of carcinoma of the ampulla of Vater, rates as low as 4.2 per cent have been reported.[13] Patients with hepatic, renal, cardiac, or cerebral insufficiency are not candidates for resection. It is generally agreed that resection is not indicated if definite metastases are present, and resection of major vessels is rarely indicated. The higher operative mortality rate following treatment of carcinoma of the pancreas as compared to treatment of ampullary lesions, has largely been due to hemorrhage; the frequent adherence of the tumor to major vessels makes resection for pancreatic tumors more hazardous. Thus, the presence or absence of adherence should be determined before making a final decision concerning pancreatoduodenectomy.

Another technical point of importance concerns the proper performance of a pancreatojejunostomy to prevent the development of a pancreatic fistula. The author is of the opinion that the technique described by Child is preferable.[2] An accurate two-layer anastomosis is mandatory. It is believed that proper utilization of this technique will significantly decrease the incidence of pancreatic fistula.

In our clinic, there has been a reduction of mortality rate among those patients operated upon by members of the senior staff in recent years. In the last consecutive 31 resections, there have been only 3 deaths, a mortality rate of slightly less than 10 per cent. Resection in these patients was limited to a subtotal pancreatectomy. Total pancreatectomy is not indicated except in the rare instance where the lesion involves the entire gland, without spread beyond the pancreas. When the lesion is limited to the head, the use of total pancreatectomy will be attended by a higher operative mortality rate and a higher percentage of postoperative problems, without increasing the percentage of five-year survivals.

Another important point is the necessity for close observation of patients in the late postoperative period and an aggressive attack upon lesions which may de-

velop. The presumption that recurrent symptoms are due to inoperable recurrent disease is unwarranted. In the literature, one finds reports of patients who died of benign disease in the late postoperative period without recurrence of cancer, because the significance of symptoms was misinterpreted.[3] Four of our long-term survivors have required surgery in the late postoperative period. Two had recurrent jaundice due to benign stricture of the choledochojejunal anastomosis. One of these has been previously reported in detail.[6] Both were successfully treated, and both have survived more than five years. One patient, as previously mentioned, had a successful resection of a second primary carcinoma. The fourth patient developed a solitary recurrence in the abdominal wall following the resection of an ampullary tumor. This patient is alive and well without further evidence of recurrence, three years after the initial resection.

Summary

Pancreatoduodenectomy is the treatment of choice for carcinoma of the head of the pancreas and other malignant lesions in the periampullary region. Whereas, the operative mortality rate remains high, it has been significantly reduced in recent years, and recent reports of the late results following use of this procedure show an increasing number of patients living five years or more following surgery. An analysis of 47 patients treated by pancreatoduodenectomy in Baylor Affiliated Hospitals is presented. The overall operative mortality rate was 19 per cent. Two patients, one with carcinoma of the common bile duct and one with carcinoma of the ampulla of Vater, have survived more than five years. Other patients with carcinoma of the pancreas, carcinoma of the ampulla of Vater, and carcinoma of the duodenum are living and well, without recurrence of tumor more than three years postoperatively.

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Trends in Surgery for Otosclerosis*†

• An evaluation of the progress in surgical procedures for the correction of deafness due to otosclerosis.

HAROLD G. TABB, M.D.
New Orleans

ABOUT fifteen million Americans suffer from some impairment of hearing. Approximately a third of these suffer from otosclerosis. For almost a hundred years various surgical procedures have been advocated for it. This is a disease that is not amenable to medical therapy. Only surgery offers any chance for improvement in hearing, but for eighty of these hundred years no significant surgical progress was made. Within the last twenty years, in sharp contrast to the earlier record of failures, significant progress has been made. The recent accomplishments are due, in general, to the progress of medical science and are due, in particular, to the almost explosive progress made in otology and otologic surgery during this period.

Micro-Orthopedic Surgery

What is known as micro-orthopedic surgery has brought a new and hopeful outlook in otosclerosis. An operating microscope has been developed which can magnify the aural structures up to 40 times, and newer surgical techniques have been developed which permit a direct attack on the otosclerotic foci within the ear, without disturbing the normal regional anatomy or creating external deformities.

The present oval window surgery is properly described as the most minute, most precise, and most delicate surgery performed in the human body. It must be extremely precise because distances are measured in microns. The total field of operation measures 2 by 3 mm. The stapes is 1 by 3 mm. at the base and is 3.5 mm. high. The surgeon must work at all times under a magnification between 6 and 25, and, obviously, he must not undertake such surgery without special preparation for it.

With the magnification provided by the operating microscope, and with instruments which themselves must be handled under magnification, the modern otologic surgeon can approach the middle and inner ear through the external auditory meatus by reflecting the tympanic membrane. Incisions behind the ear or through it are no longer necessary. When exposure has been achieved, the surgeon, using a small operating pick, can palpate the ossicles and thus observe, at first hand, the mechanism of hearing (Figure 1). As sound waves strike the tympanic membrane, they are converted by means of an ossicular chain into the fluid pressure waves that stimulate the organ of Corti in the cochlea. Armed with this information, the surgeon can identify any interference with the movement in the ossicular chain which alters the sound pressure transformation system of the middle ear and can extirpate the pathologic process or can bypass it.

Procedures that utilize the operating microscope have appeared so rapidly within recent years that it is still difficult to appraise their true value. Certain trends in otologic surgery, however, are now quite clear, and it seems worth while to attempt a preliminary evaluation of these operations in the light of personal experiences with them, and to draw certain conclusions from these experiences.

Before discussing these trends, it might be useful to summarize the salient facts of otosclerosis. This is a disease which

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† From the Department of Otolaryngology, Tulane University of Louisiana School of Medicine, New Orleans, La.

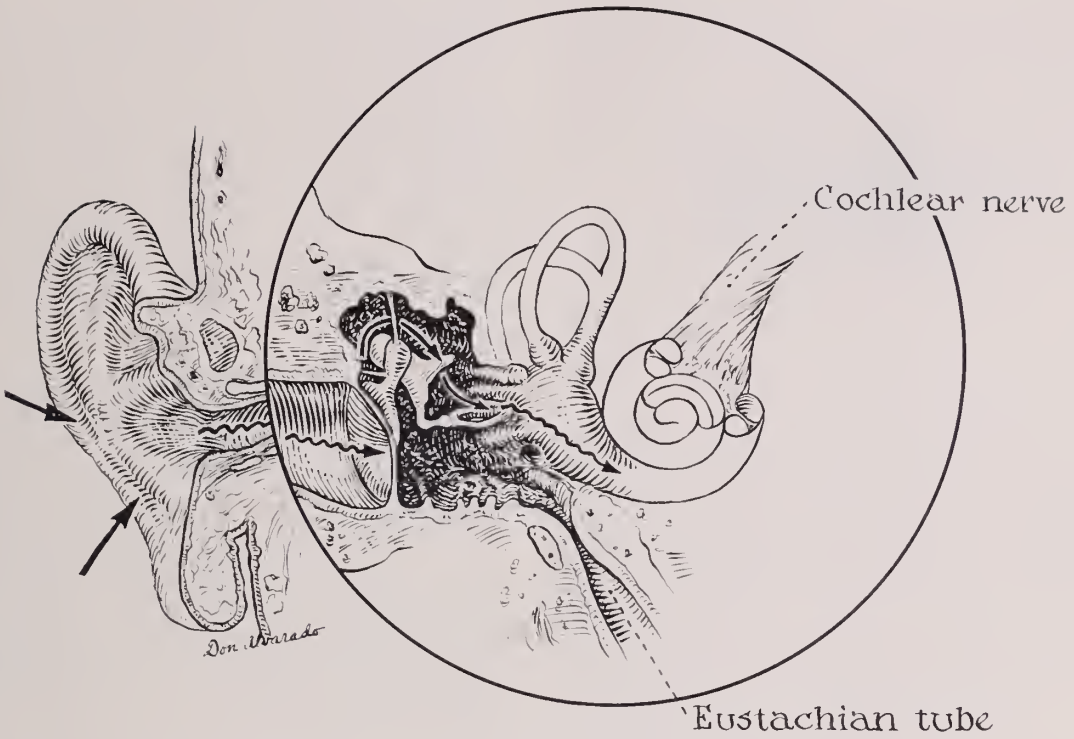


Figure 1. Schematic drawing of ear, showing normal conduction of sound.

usually strikes in the late teens. It affects women more often than men and white persons more frequently than negroes. It has a hereditary link, and it appears to have some hormonal association, as the hearing impairment is enhanced by pregnancy.

Pathologically, otosclerosis is a proliferation of spongy new bone in the wall of the bony labyrinth just anterior to the oval window. It does not always progress. In most persons, in fact, it remains dormant in this area throughout life and never manifests itself clinically. In about one of every eight otosclerotics, however, according to Guild,[1] the abnormal bone extends into the oval window and bony proliferation progresses until movement of the stapes in the window is impaired. As a consequence, the transmission of sound through the ossicular chain is also impaired, and the result is clinical otosclerosis and deafness. The hearing loss is conductive, chronic, and progressive. It is demonstrated audiometrically by a significant air-bone gap in an otherwise normal ear.

The Fenestration Operation

The first one-stage procedure for restoration of hearing in otosclerotics was the fenestration operation, which was developed by Julius Lempert[2] of New York in 1938. By this technique, the fixed otosclerotic stapes is bypassed and a new window is created into the horizontal semicircular canal, through which sound waves are transmitted into the labyrinth and cochlea (Figure 2). The fenestration operation has been modified and improved

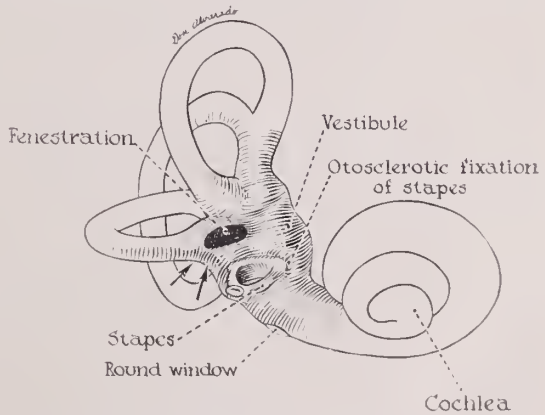


Figure 2. Schematic drawing of ear, showing passage of sound after fenestration.

by Shambaugh [3] and House,[4] among others. In the best hands, it restores serviceable hearing in approximately 80 per cent of deafened otosclerotics. Its value has been established by time, and it is still utilized today by many otologic surgeons.

Unfortunately, as time has passed, certain disadvantages of fenestration have become evident:

1. It has a narrow range of application, being contraindicated in the very young and the very old, as well as in patients with unilateral deafness.

2. Even in the most promising candidates, it cannot restore normal hearing. There is an inevitable loss of approximately 10 per cent of hearing ability because of the operative procedure itself, and the lower the bone conduction level at operation, the greater is the handicap to be overcome (Figure 3). If the preoperative bone conduction level is very low, therefore, the operation cannot be done.

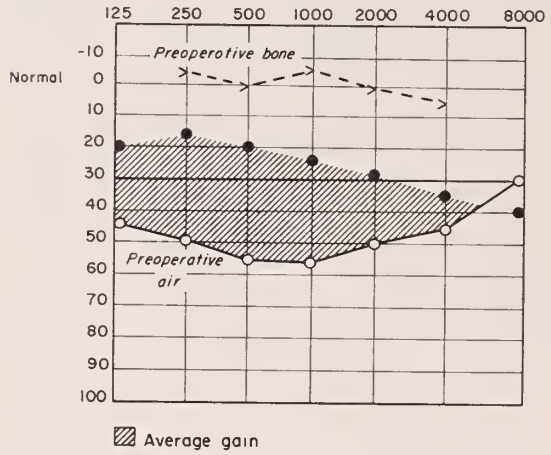


Figure 3. Composite audiogram, showing average gain in hearing in 45 otosclerotic patients treated by fenestration operation.

3. From the surgeon's standpoint, fenestration is a delicate, tedious procedure, for which highly specialized skills and discipline are required.

4. From the patient's standpoint, the operation is a major surgical procedure, for which a prolonged period of hospitalization is required.

5. The postoperative aural cavity that is created requires repeated aftercare.

6. The operation also has some undesirable side-effects. The patient usually compensates for the annoying vertigo within six months, but other effects are more long-lasting. Pressure on the newly created window, its thermal stimulation, and even sudden movement may be followed by nystagmus and dizziness. The patient's activities must therefore be somewhat restricted, particularly with regard to swimming, while shower baths may also have to be eliminated.

Stapes Mobilization

Stapes mobilization was developed in 1953 by Rosen [5] of New York, in an endeavor to find a simpler procedure than the fenestration operation and to overcome some of the disadvantages inherent in it. His operation does just what its name implies; in contrast to the bypassing technique of fenestration, it makes a direct attack upon the fixed stapes (Figure 4).

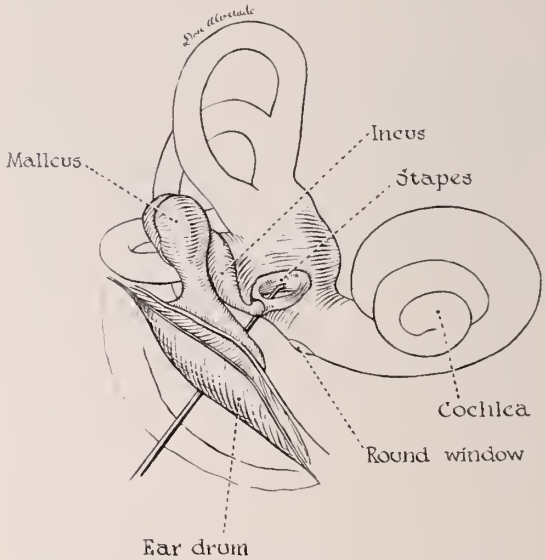


Figure 4. Technique of stapes mobilization.

Stapes mobilization techniques began to be reported in the literature in 1870, but there were few successes, and at the end of 30 years the procedure was abandoned. The same reasons which led to a revival of interest in it also account for such success as it has achieved. They include the development of finer surgical techniques, first learned in fenestration surgery; the creation of a better surgical armamentari-

um; and the availability of broad-spectrum antibiotics for the control of infection.

Otologists showed only mild enthusiasm for Rosen's operation at first because they believed that the nature of the pathologic process in otosclerosis made it almost inevitable that refixation of the stapes would occur. Because of its simplicity, however, many recommended the operation as a preliminary procedure to the more formidable fenestration operation. Otosclerotic patients reacted to the operation with enthusiasm and, as knowledge of it spread, more and more deafened persons demanded it. It has probably been performed well over a hundred thousand times in the United States.

Stapes mobilization has decided advantages. It can be performed at any age, in contrast to the limited range for fenestration. It is a simple procedure as compared with fenestration. It is followed by minimal discomfort.

But what otologists had feared came to pass only too rapidly, and enthusiasm for stapes mobilization began to die down as accumulated statistics showed how really brief was the period of auditory improvement. From 70 to 80 per cent of all ankylosed stapes can be mobilized satisfactorily, but not more than a third remain mobile after a year and not more than a fourth after two years. My own experience is in accordance with the general experience (Figure 5). Up to January 1, 1959, I had performed 75 stapes mobilizations; at three months, there had been a regression of the surgical gain in hearing in half of all successful patients. Furthermore, these losses continue. I have recently seen two patients who were operated on successfully but who suffered refixation of the stapes and loss of their hearing gains two years after operation.

These results are in sharp contrast to results with the fenestration operation, in which 75 per cent of all patients who have been successfully operated on have serviceable hearing for at least a year after operation and usually much longer.

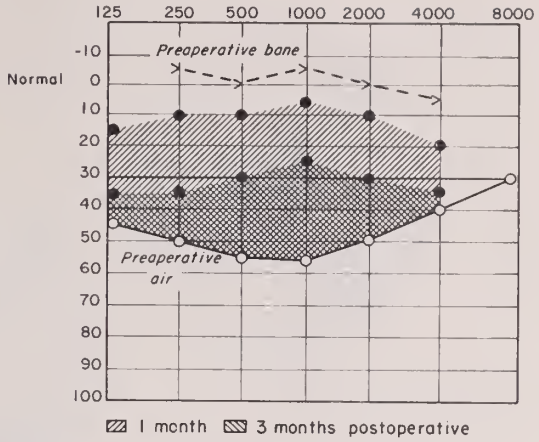


Figure 5. Composite audiogram, showing average gain in hearing in 75 otosclerotic patients treated by stapes mobilization at the end of one month and of three months after operation. Note that at three months half of the postoperative gain has been lost.

The uncertainty and unpredictability of the results of the stapes operation have caused some otologic surgeons to return to the fenestration operation, in spite of its disadvantages and their initial enthusiasm for the simpler operation.

Modifications of Rosen's operation, which attack the footplate directly and attempt to mobilize it by needling, cutting, prying, chiseling and other maneuvers, have all, like the original operation, attained some degree of success, only to be followed by re-ankylosis of the stapes and regression of the hearing in a large number of cases.

Stapedectomy with the Application of Prostheses

Out of the maze of modifications of stapes mobilization there emerged a new trend in surgery for otosclerosis. In 1958, Schuknecht [6] of Detroit and Shea [7] of Memphis both advocated a similar procedure which consists of removal of the entire stapes and the otosclerotic focus from the oval window and reconstruction of the sound-conducting mechanism. The new window is created at the site of the old natural window to the labyrinth that has become closed by otosclerosis, and the normal sound-conducting mechanism is reconnected at the new window.

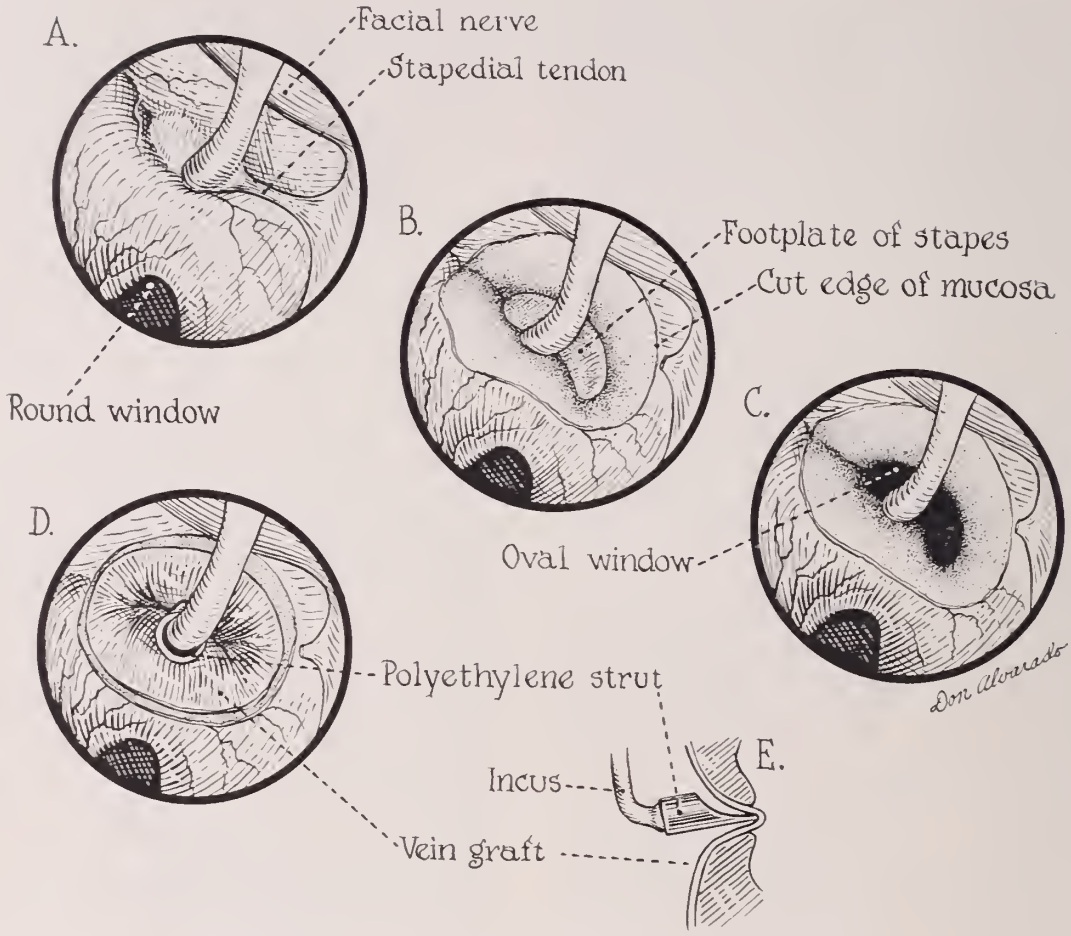


Figure 6. Successive steps of Shea fenestra ovalis operation.

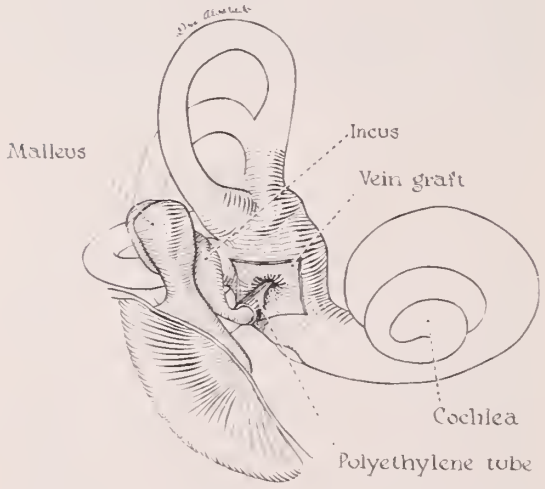


Figure 7. Technique of application of vein graft and polyethylene tube in Shea operation.

Schuknecht, after stapedectomy, attaches a stainless steel wire strut between the incus and a fatty tissue plug, secured from the lobe of the ear, which fills the oval window. Shea, after stapedectomy, covers the oval window with a vein graft (Figures 6 and 7) and then reconnects the incus to the window with a polyethylene strut fashioned to fit around the lenticular process of the incus and tapered to make contact with the vein graft in the oval window.

The initial successes with this operation have been almost incredible. Many otologists report that more than 90 per cent of their patients have maintained their hearing for two years, the life span of the operation itself.

During the past fourteen months I have performed 50 operations for otosclerosis with Shea's technique.[5] (Figure 9). In every instance I have followed his careful description exactly.

The age range of these patients was from 24 to 80 years. Their deafness had

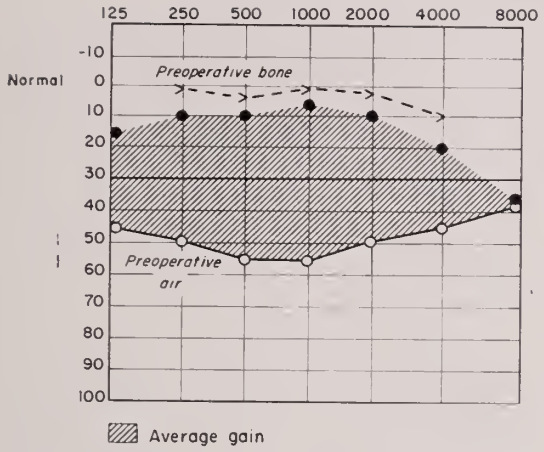


Figure 8. Composite audiogram, showing average gain in hearing in 50 otosclerotic patients after Shea fenestra ovalis operation.

RESULTS OF 50 CONSECUTIVE FENESTRA OVALIS OPERATIONS (SHEA) FOR OTOSCLEROTIC DEAFNESS

Results	Cases	Percentage	
Normal hearing (0-10 db)	30	60	98
Serviceable hearing (10-30 db)	19	38	
Unsuccessful	1	2	

Figure 9. Results of 50 consecutive fenestra ovalis operations (Shea) for otosclerotic deafness.

been present from six months to forty years. They included both promising and unpromising candidates. The lapsed time after operation ranges from one month to fourteen months.

Thirty patients have completely normal hearing, with complete obliteration of the air-bone gap, and 19 other patients have serviceable hearing. In the single failure in the series, the loss is for high tones only; hearing for the lower tones has been well maintained. Furthermore, there have been no dead ears.

In four instances, the sensitivity of the eighth nerve has improved over the preoperative level, as demonstrable by measurement of bone conduction. Others who have reported occasional cases of this kind can explain it no more than I can.

One case of particular interest I did not include in the series, for while it is superficially a failure, practically it is a success. This patient had a postoperative level of 35 db, which is a good result when it is viewed in the light of her preoperative level of 80 db. In other words, her hearing loss was reduced from 90 per cent to 25 per cent. A 35-db level is socially adequate for this housewife, who is well satisfied with the results of her surgery.

These results are unobtainable, for the reasons already mentioned, with the fenestration operation, and they are seldom attained, and almost never maintained, with stapes mobilization. The average hearing level obtained with the fenestra ovalis operation, as Shea has termed his technique, is well above the average obtained with either fenestration or stapes mobilization (Figures 8, 3 and 5).

Comment

The experience of the last 20 years indicates, as might have been expected, that the preferred type of surgery in otosclerosis must offer maximum hearing gain with the least possible alteration in anatomy and the least possible reduction of existing auditory function.

The classic fenestration operation, although it has been tested by time and its results are generally predictable, appears doomed to eventual obsolescence, for it does not satisfy these criteria. Moreover, patients are reluctant to undergo so formidable a procedure when other, simpler procedures are available.

Stapes mobilization has not given enough permanent cures to warrant its continued use except in certain selected cases. The experience with it has been wide and the long-term results are, in general, disappointing.

The procedures devised by Schuknecht and Shea appear to satisfy most nearly the criteria of an ideal operation. Both are on a sound physiologic basis. They incorporate the advantages of the stapes mobilization operation, but improve upon them. The normal sound-conducting mechanism is maintained, but refixation of the stapes does not occur because the pathologic process which causes ankylosis has been attacked directly and has been completely removed. Since the aural canal and tympanic membrane are normal, there is no restriction upon the patient's activities after operation. Although too few of

these operations have been done to speak positively, the initial results have been so encouraging that a continued, extensive trial of this technique seems fully justified.

Summary

Remarkable evolutionary changes have occurred during the last twenty years in surgery for otosclerotic deafness. Progress has been so great that it is now possible to predict, with certainty, that about 90 per cent of this group of deafened persons can obtain serviceable hearing from the newer procedures. The operation devised by Shea, with the application of a vein graft and polyethylene tube prosthesis after stapedectomy, has shown exceptional initial promise and at the present time seems the preferred procedure for otosclerotic deafness. The operation has been available, however, for less than two years, and more time must elapse before it can be properly evaluated.

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8. Shea, J. J., Jr.: Personal Communication.

Discussion

Dr. T. P. Raggio (Baton Rouge): I thank Dr. Tabb for asking me to discuss his excellent paper on such a challenging and stimulating subject. To regain a vital sense which had been lost gives a new lease on life to those individuals afflicted with ostosclerosis. Dr. Tabb and many others are providing this new lease every day. Only when one considers the number of people who have otosclerosis does the true value of this surgery become evident. The economic factor of man hours of work gained by restored hearing, which would have otherwise been lost, I am sure would be astounding if the exact figures could be compiled.

Dr. Tabb discussed only the methods of attack on ostosclerosis which have withstood the passage of time. Of course many techniques have been tried and discarded as being either of only temporary value, or too cumbersome, or too likely to produce additional damage to hearing.

Already some otologists who had been using vein grafts following removal of the stapes have abandoned the vein and employed gelfoam to cover the oval window.[1] Each change in technique indicates disadvantages of the old methods and a search for new and better ones.

Dr. Tabb is to be praised for not having any cases of dead ears resulting from stapes surgery. The general trend throughout the country has been that as attack on the stapes became more radical the per cent of improvements increased, but so did the number of worsened or dead ears. We have done approximately 20 cases in the past four months using gelfoam and a polyethylene strut following stapedectomy without misfortune, and of course hope for our good fortune to continue. However, statistics suggest that when many cases have been done, we can expect some bad results.

At a recent meeting a speaker discussing stapes surgery predicted that someone in the future would rediscover the fenestration operation. His pessimism concerning stapes surgery was based on the refixations occurring following simple stapes footplate mobilization, and on the early procedures attacking the stapes footplate. But with the development of procedures as Dr. Tabb has discussed and further improvements that will inevitably be made in the future, stapes surgery is almost certain to replace fenestration of the horizontal canal as the treatment of choice for all otosclerotic. The opinion exists now that should a patient with a well mobilized stapes fail to show significant hearing improvement, he is not likely to be benefitted by fenestration either.[2] The future answer will probably be some safe and efficient method of reestablishing the normal sound conduction and sound pressure mechanism to the cochlea. The ultimate answer will be determining the etiology of otosclerosis and the development of prophylactic and curative therapy.

Operability of otosclerotic patients, as Dr. Tabb states, is not limited to those patients with a bone conduction curve at or near the zero level when stapes surgery is employed. Certainly many patients, who would not be expected to have practical hearing following surgery, can be improved to the extent that use of a hearing aid postoperatively will raise hearing to a practical or at least useful level.

I would like to make one additional comment regarding trends in this type of surgery. That

1. House, Howard. **Personal Communication.**
2. House, et al. Workshop on Reconstruction Middle Ear Surgery, A.M.A., Arch. Otol. (March) 1959.

is the importance of obtaining binaural hearing.[3] Patients with unilateral otosclerosis may be given normal binaural hearing with stapes surgery. This of course is not possible with fenestration. And too, because of the little discomfort, disability and expense associated with stapes surgery patients are more likely to have both ears operated now than they were when fenestration was all we had to offer.

3. Wright, Herbert N., Binaural Hearing and The Hearing Impaired, A M.A. Arch. Otol. (Oct) 1959, pp. 485-493.

Historical Notes

Editorial

"A green Christmas makes a fat church yard." This has been an English proverb for generations—how many we are unable to state. The questions which principally concern us are, first, if the theorem be true as it respects England, is it equally applicable to this country? Next, what are the diseases which are most likely to be protected and fostered by a green Christmas? Third, what steps shall the medical profession take to secure exemption from the penalties entailed by a warm winter?

In reply to the first query, it may be safely affirmed that the two most mischievous, morbid pests of this country are held in abeyance, at least, by low markings of temperature. * * * The evolution of swamp poison is checked by frost, but the poison is not permanently destroyed, for the warmth of the ensuing Spring renews the toxic energy of the germs in the very locality where they were caught by the frost of winter.

* * * Yellow fever poison not only ceases to be evolved under the influence of frost, but seems subsequently to be incapable of survival in such form at least as would be productive of disease. * * * The past winter has been too mild to justify the confidence in the belief that yellow fever germs have been everywhere destroyed by low temperature.

New Orleans M. & S. J. 7:916 (March) 1880

Laboratory Determinations During Treatment With Triflupromazine

• The laboratory determinations on 67 patients treated with Vesprin are reviewed and the conclusions given.

CLOVIS S. TOLER, M.D.*
Clinton, Louisiana

WITHIN recent years the phenothiazine derivatives have become increasingly prominent as therapeutic agents in psychiatric practice. Their powerful tranquillizing or "neuroleptic" action, as Freyhan [1] has described it, has provided important beneficial effect on psychotic manifestations such as delusions, hallucinations and pathologic excitement in a significant number of patients.[1, 2] As in the case with any drug with potent pharmacolgic and therapeutic action, side effects are to be expected and have been encountered in the use of these drugs.[3] Chlorpromazine, which was the first phenothiazine to find clinical application, is the only one that has been used extensively enough, however, to permit any conclusions as to the incidence and significance of these reactions.[3]

Consequently, chlorpromazine becomes the logical standard for reference in evaluating the side effects of more recently developed phenothiazines. Among the side effects reported with chlorpromazine have been jaundice and agranulocytosis.[3-8] Though jaundice has been rare [3, 4] and agranulocytosis exceedingly rare,[3] these are important toxic reactions and the question arises whether similar toxic changes will develop with other phenothiazine derivatives. Accordingly, liver function studies and complete blood counts are frequently performed in the course of clinical trials of new phenothiazine compounds.

Such laboratory determinations have been made in a series of 100 patients treated with triflupromazine (Vesprin), a trifluoromethyl analog of chlorpromazine, over a period of five and a half months, at the East Louisiana State Hospital in Jackson, Louisiana. The therapeutic results achieved in these patients have been described by O'Brien and Anderson.[9] The purpose of this paper is to report the laboratory findings in 67 of the 100 patients who comprised the same series of patients. In 33 of the original 100 patients both pretreatment and post-treatment data are not available so these patients have been dropped from this report.

Method

Triflupromazine was administered orally and or intramuscularly to 67 hospitalized psychotic patients every day for total daily doses ranging from 30 to 300 mg. The smaller doses were administered to elderly patients with senile psychosis or chronic brain syndrome associated with cerebral arteriosclerosis. The higher doses were given to younger patients with schizophrenia. All of the patients had previously been given psychiatric treatments which included electro-shock therapy, metrazol therapy, insulin coma treatment, chlorpromazine and reserpine. None of the patients had received any tranquillizing drug, however, for at least one month before the administration of triflupromazine. Prior to beginning treatment with triflupromazine a complete blood count was taken and serum alkaline phosphatase values and serum bilirubin levels were determined in each case. These serological studies were repeated at approximately two months (six to eight weeks) and four months (twelve to sixteen weeks) after medication was begun.

Results

The findings in 51 of the 61 patients who were treated for periods up to four

* Clinton Infirmary, Inc., Clinton, Louisiana.

TABLE 1
AVERAGE DETERMINATIONS IN 51 PATIENTS TREATED WITH TRIFLUPROMAZINE FOR APPROXIMATELY 4 MONTHS

Data Determined	Before Therapy	After 6 to 8 Weeks of Therapy	After 12 to 16 Weeks of Therapy
Hemoglobin (%)	101	107	102
R.B.C. (No.)	4,966,000	5,110,000	4,976,000
W.B.C. (No.)	8,490	8,200	8,940
Neutrophils (%)	62	61	62
Lymphocytes (%)	29	30	32
Large Mononuclears (%)	4	4	2
Eosinophils (%)	4	4	3
Basophils (%)	1	1	1
Serum (Mg./100 ml.)			
Bilirubin	0.51	0.41	0.33
Alkaline (Bodansky Phopshatase Units 100 ml.)	1.6	1.9	2.2

TABLE 2
AVERAGE DETERMINATIONS IN 16 PATIENTS TREATED WITH TRIFLUPROMAZINE FOR 6 TO 8 WEEKS

Data Determined	Before Therapy	After Therapy
Hemoglobin (%)	100	104
R.B.C. (No.)	4,910,000	5,081,000
W.B.C. (No.)	8,834	8,693
Neutrophils (%)	56	65
Lymphocytes (%)	34	26
Large Mononuclears (%)	5	4
Eosinophils (%)	4	4
Basophils (%)	1	1
Serum (Mg. 100 ml.)		
Bilirubin	0.54	0.57
Alkaline (Bodansky Phosphatse Units/100 ml.)	2.39	2.28

months have been averaged and appear in Table 1. The findings in the remaining 16 patients after the completion of treatment for two months have been averaged and are given in Table 2. The variations in the white blood count in the individual cases are tabulated in Table 3.

It is evident from Tables 1 and 2, as well as from Table 3 that there is no apparent consistent influence of the administered drug on the serologic values determined in these patients. Variations did occur but they were not usually marked as is evidenced by the slight change in the average of these determinations for the group as a whole following treatment. Variations in the white blood count were for the most part within normal limits, and as many patients showed a rise as exhibited a fall in the white blood count. In only 5 patients in the whole series were the post-therapy white blood counts below normal (5,000). In 2 of these, the pretreatment counts had been below normal, and in all 4 of the 5 who were treated for longer than one month the count rose again to normal levels. Serum bilirubin was normal † in

TABLE 3
VARIATIONS IN WHITE BLOOD COUNT

Time of Determination	No. of Patients Showing Drop in W.B.C.	No. of Patients Showing Rise in W.B.C.	No. Showing No Change	Total No.
After two Months therapy	7	9	0	16
After four Months therapy	18	30	3*	51

* Includes one patient for whom values were not recorded.

† Serum bilirubin: normal, to 1.2 total.[8]

all but 2 patients and serum alkaline phosphatase exceeded normal values ‡ in only one of these cases. In neither of these patients was there any clinical sign of hepatic dysfunction. None of the observed variations in the series is considered to have clinical significance.

Summary

The findings of serological studies in 67 patients treated with trifluprom azine for up to five and a half months are given. These findings reveal no apparent consistent influence of the administered drug upon the serological determinations in these patients, and none of the variations observed was considered to be significant clinically.

‡ Serum alkaline phosphatase: normal, 1 to 4 Bodansky units.

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Prof. Samuel D. Gross, M.D., D.C.L. OXON.

The arrival of Prof. Samuel D. Gross in New Orleans on the 18th of March was an incident that compares with but one other event in its medical history. We allude to the visit of the celebrated Marshall Hall. The reception of this venerable father has been so general and profound that we feel sure his stay in the Crescent City will add another to the many delightful memories which cling to the heart of this good old man. He was present at the Commencement Exercises of the Medical Department of the University of Louisiana, and the few words of welcome and advice to the graduates were impressive and highly appreciated.

He was the guest of Prof. T. G. Richardson, his former pupil, and the reception given him by that gentleman at his beautiful residence was an enjoyable affair.

On the 24th inst., a complimentary reception was tendered Prof. Gross by the members of the medical profession in New Orleans. The reception was given at Spanish Fort, Lake Pontchartrain. The day was delightful and at 1 o'clock a special train conveyed the party to its destination. A joint committee, composed of six members each from the Orleans Parish Medical Society and the New Orleans Medical and Surgical Association had charge of all arrangements.

New Orleans M. & S. J. 7:982 (April) 1880.

Scalene Node Biopsy*

• The author, after reviewing a series of 16 cases for his clinic and the results obtained by others reported in the literature, concludes that this procedure is valuable in establishing a diagnosis of pathology in chest diseases.

MARVIN T. GREEN, M. D.
Ruston

POSITIVE evidence of intrathoracic disease is not obtained by nonsurgical procedures generally used. In an effort to establish the specific nature of pathology within the thoracic cage many diagnostic procedures are employed, including roentgenograms, fluoroscopy, bronchoscopy, bronchial washings, pleural fluid studies, bone marrow examinations, needle biopsy, skin tests, and thoracotomy.

Since the work of Daniels [1] published in 1949, describing "A method of biopsy useful in diagnosing certain intrathoracic disease," increasing attention is being paid to scalene node biopsy as a diagnostic procedure for thoracic disease.

This was described by Daniels as a procedure of lymph node biopsy which is simple and frequently yields biopsy information making a definite pathological diagnosis possible. He reported 5 cases in which he used this procedure. None of these had palpable nodes. These 5 cases yielded findings of Boeck's sarcoid, 2 cases; carcinoma, 2 cases; and silicosis, 1 case.

The concept of this procedure by Daniels of San Francisco was built on the work of Rouviere [2] of Paris, published in 1932, in Ann Arbor, Michigan, in which Rouviere, in an extensive study of the lymphatic drainage of the thoracic contents, showed that this drainage does not confine itself to a lobar pattern but is more segmental in pattern. Except for the upper segment of the left lung and left hilus the majority of collecting systems finally empty into the right paratracheal nodes. Therefore, for lesions in the right lung and hilus, left lower and mid lung, biopsy of right scalene nodes will be most fruitful in pathology, and for the left upper lung and hilus left scalene biopsy is indicated.

In a reported series scalene node biopsy can be calculated to give diagnostic information in thoracic disease in somewhat more than 30 per cent of cases. The procedure will give a definite pathological diagnosis in somewhat more than 80 per cent of pulmonary sarcoid.

The simplicity of scalene node biopsy and the high percentage of valuable diagnostic information yielded should argue for more widespread use of the procedure. We concur with Harkins,[3] et al in that a technique that spares needless suffering for the hopelessly involved patient is as important as the extension of excisional therapy to cure more people.

Indications for Scalene Node Biopsy

In general, scalene node biopsy is valuable whenever it is desirable to know the contents of the mediastinal lymph nodes and the pathological nature of lesions within the thoracic cage. Specifically the procedure is of value and indicated in:

1. All cases of suspected carcinoma of the lung.
2. All cases of proven carcinoma of the lung for evidence of spread beyond the confines of the chest. When the scalene nodes are positive for metastatic carcinoma, lung resection is a very questionable procedure.

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* Presented at meeting of the Jackson-Lincoln-Union Medical Society.

From the Department of Surgery of Green Clinic, Ruston, La.

3. All x-ray opacities of the lung not identified.
4. In mediastinal or hilar enlargements, scalene node biopsy is valuable in proving:
   a. Boeck's sarcoid
   b. Tuberculous glands
   c. Lymphosarcoma
   d. Hodgkin's disease
5. Pulmonary fungus infections.
6. Suspected metastatic lesions.
7. Pneumoconiosis to identify foreign body substances.

Technique for Scalene Node Biopsy

While this is a simple procedure, it is not an office procedure. The biopsy is readily accomplished with the patient in supine position and the head turned to the opposite side from the proposed biopsy area. The skin and superficial areas are infiltrated with a local analgesic agent of choice, an incision is made ½ inch above and parallel to the clavicle approximately 1½ to 2 inches in length, the center of the incision approximately over the posterior border of the sternocleidomastoid muscle.

The deep cervical fascia is opened and the triangular area of the prescalene space is entered. This space is bound medially by the internal jugular, inferiorly by the subclavian vein and laterally by the omohyoid muscle. Its floor is the anterior and medial scalene muscles with the phrenic nerve within the muscle sheath. The roof is the superficial layer of the deep cervical fascia. The space contains fat, nodes, and blood vessels—transverse cervical and inferior thyroid. These vessels are readily retracted or they may be clamped, cut and ligated. Traction is gently applied to the fat mass and this along with the contained nodes is removed by blunt dissection. Glands into the suprasternal notch area are readily removed. Careful dissection may remove nodes from the upper mediastinum. This, however, is more than a scalene node biopsy.

There are complications to be avoided in this area. The most frequent complications are likely to be: hematoma, damage to the thoracic duct on the left or lymphatic duct on right, injury to the subclavian or jugular vein, opening the pleura, phrenic nerve injury, injury to the left cervical sympathetic ganglia producing a Horner's syndrome.

Positive nodes recovered from the scalene space are conclusive pathological confirmation of intrathoracic lesions. Negative nodes are not conclusive. Nor do negative nodes necessarily indicate resectability. Not only are these nodes sectioned but they should likewise be subjected to culture. The most common diagnoses established are Boeck's sarcoid, lung cancer, Hodgkin's disease, lymphosarcoma, carcinoma of the esophagus, granuloma (tuberculosis), and plasmocytosis.

Results

In our series of 16 cases, biopsies were done on the right side in 7 and on the left side in 8 and bilateral in one. There were 2 cases with positive nodes for carcinoma of the lung. Four biopsies yielded positive nodes for Boeck's sarcoid; 1 for erythema nodosa.[4] Thus, there were 7 positive diagnoses, 43.8 per cent.

Nine biopsies failed to yield a positive diagnosis. The final diagnoses in these cases were: carcinoma, 1 case proven by thoracotomy; left upper lobe bronchiectasis, 1 case, lobe resected; inflammatory lesions finally subsiding, 5 cases; diagnosis undetermined, 1 case. This was a 77 year old female with a mass in the lung, still living. Granuloma, one case proven by thoracotomy. Thus, there were 9 biopsies which failed to yield a positive diagnosis, 56.2 per cent.

For comparison the reports from a number of authors are listed and their percentage of cases noted in Table 1.

Conclusion

Scalene node biopsy is a valuable procedure in establishing a pathological diagnosis of chest diseases.

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TABLE 1
COMPARISON OF RESULTS

	Author	No. Cases	Positive Nodes Per Cent
1.	Daniels [1]	5	100
2.	Shefts, et al [9]	187	35.8
3.	Skinner, et al [8]	100	43
4.	Cuykendill [7]	41	19.5
5.	Delarue [5]	82	36.6
6.	Harken, et al [3]	142	31.7
7.	Shields, et al [6]	126	21.4
8.	Rochlin, et al [10]	142	45.8
9.	Shapiro, et al [11]	51	18
10.	Schwippert, et al [12]	122	12.3
11.	Conner [13]	50	28
12.	Cruze, et al [14]	164	31
13.	Green	16	43.8

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The New Anesthetic—The Bromide of Ethyl

It is generally admitted that there are essentials of anaesthesia which are not satisfactorily attained by the anesthetics in ordinary use. The inconveniences of ether and the dangers of chloroform have suggested further inquiry among the large number of chemical substances which are capable of producing insensibility to the impression of pain.

In April, 1879, my attention was directed to the bromide of ethyl by Dr. Laurence Turnbull, of this city, who was, I believe, the first to experiment on the human subject with its anesthetic properties, testing it originally on himself and afterwards on patients undergoing surgical operations, but its physiological action on some of the lower animals had been previously determined by other experimenters.

* * *

Its principal physiological characteristics which will concern the surgeon are its rapidity of action and the quickness of recovery from its effects.

* * *

Whilst feeling inclined to impress caution in regard to the use of so powerful an agent as the bromide of ethyl, I am, from a basis of experience, inclined to recommend its use to the profession.—**Phil. Med. Times,** Jan. 17. (J. R. Levis, M. D., Surgeon to the Pennsylvania Hospital and to the Jefferson College Hospital.)

New Orleans M. & S. J. 7:1144 (June) 1880.

Medical Care of the Aging in Baton Rouge

• The health of the older citizen is being discussed by both local and national planners. Basic facts, when used, are drawn principally from national averages and indices. In this study actual local conditions have been investigated. The result is a set of facts upon which sound plans—not nebulous schemes—can be built.

CARY M. DOUGHERTY, M. D.
KATHRYN McKINNEY
Baton Rouge

GETTING older is physiological. Certain differences in the manner of living are imposed upon older persons by our complicated society, especially in urban living, but the older period of life should be the time to enjoy the fruits of labor of the working years and not a time of anxiety over living conditions. It is the purpose of this report to summarize the findings of an inquiry into the matter of medical care for older persons in the Baton Rouge area. It is part of a larger study of all aspects of aging in this community being carried out by the Community Services Council and instigated by the Mayor-President's Advisory Council on Aging, and the Louisiana State Commission on Aging. Several civic organizations as well as the parish (county) medical society have cooperated in making this study.

Method of Study

Population data: Census figures and calculated interpolations were used. The Chamber of Commerce furnished an accurate analysis of population make-up.

Investigation by interview: A representative sample of five hundred persons over the age of 65 years was selected from names on the welfare rolls, and lists obtained from churches and civic organizations. These individuals were questioned by volunteer interviewers with a standard set of queries prepared ahead of time. Answers were standardized so that totals could be made. Questions were asked concerning food, clothing, shelter, medical care, working, and recreation. The answers represent the thought and word of the person being interviewed with a minimum of interpolation and suggestion by the interviewer.

Investigation by review of hospital records: A study of records of the three hospitals serving the parish of East Baton Rouge was carried out. In the two private non-profit hospitals the lists of admissions were counted for persons 65 years and over, and every tenth numbered chart was pulled for medical review. At Charity Hospital at New Orleans all admissions of the same age group for a period of six months were analyzed. In addition, a blind study of the accounts of 120 older patients was carried out at one of the private hospitals. No identification of patients' names was made from this investigation.

Observations

Table 1 shows the total population of East Baton Rouge Parish and the per cent of persons over 65 years of age, July, 1959.

TABLE 1

	Total Pop.	Persons 65 and Over	
		Number	Per Cent
Parish, all	228,095	10,492	4.67
White	152,063	6,085	4.0
Non-White	76,032	4,407	5.8

There were 25,921 admissions to all three hospitals of residents of this parish for the year 1959. Of these, 1577 were 65 and over. The rate of hospital admission is 113.7 per thousand of population for all, and 150 per thousand for persons 65 years old and over (Fig. 1). Seventeen per cent of all hospital admissions from this parish were to Charity Hospital, while 9 per cent of the older admissions were at that hospital. Females outnumbered males about 6 to 5.

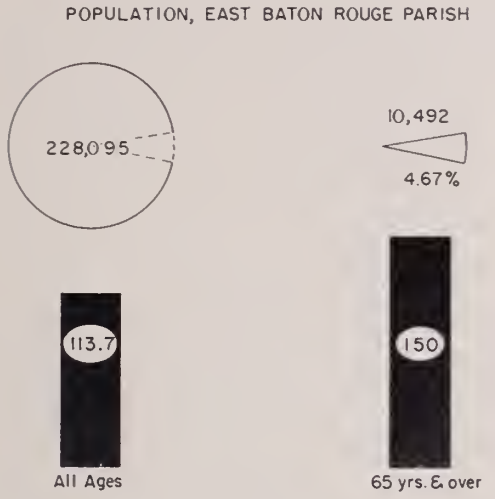


Fig. 1 Population make-up & hospital admissions, all ages compared with group 65 years & over

The ratio of white to nonwhite admissions at Charity Hospital for the 65 and over group was 24 to 76, and for all admissions 12 to 88. At the two private hospitals the same relationship was 92 whites to 8 nonwhites. The population of East Baton Rouge Parish (Table 1) is 66.7 per cent white to 33.3 per cent nonwhite persons.

Table 2 depicts the principal cause for admission of the older persons to the three general hospitals (Fig. 2). This information was assembled from the sample of charts reviewed, 10 per cent of 1959 admissions in the case of the private hospitals and all admissions for a six months' period at Charity Hospital.

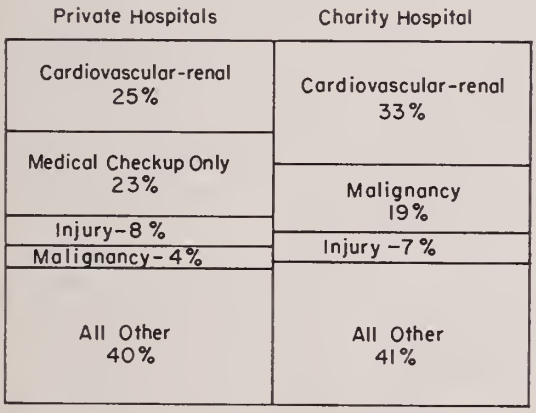


Fig. 2 Principal Diagnosis, Hospital Admissions of persons 65 years & over

TABLE 2

Principal Diagnosis	Per Cent Having Principal Disease at Private Hosps.	Charity Hosp.
Cardiovascular, renal	25%	33%
Check-up only	23	0
Injury	8	7
Malignancy, initial management	4	19
Other (emphysema, prostatism, hernia, inflammatory condition)	40	41

A summary of principal treatment given the same group of patients is outlined in Table 3.

TABLE 3

Principal Treatment	Per Cent Receiving Each Type Treatment at Private Hosp.	Charity Hosp.
Medical, nursing care, palliation	55.5%	45.7%
Major surgical operation	19	31
Orthopedic, traumatic	12.7	0
Other, diagnosis only, radiologic treatment	12.7	22.9

The hospital stay in days ranged from one to 67, the median number of days per patient for the private institutions being 6.9 while that for Charity Hospital was 13. Table 4 shows the distribution of patients by length of stay in the private hospitals.

TABLE 4

Length of Stay	Per Cent of Total*
7 days or less	59%
8-14 days	24
15 days or more	17

* Based on all admissions to hospital of persons 65 years and over.

Patients admitted to Charity Hospital were not billed for hospital or doctor services. Table 5 displays some detail of hospital costs for the aging in one of the private hospitals. This information was gathered by analyzing the accounts of the same sample of hospital admissions for which the medical data were summarized above.

Information gathered by interviewing a representative sample of older residents revealed facts and statements of their own views of their health. Regarding income, 85 per cent stated they were not working.

TABLE 5

Average hospital bill	$258.95
Per cent of patients having insurance	31.7%
Per cent of bill paid by insurance	24.0
Per cent of bill paid by patient	70.2
Per cent paid by patient and insurance	94.2
Per cent paid by state charity contract	4.2
Per cent absorbed by hospital	1.6

Forty-four per cent of all parish residents 65 and over are receiving welfare payments. Table 6 shows total monthly income as stated by the interviewee (Fig. 3).



Fig. 3 Monthly Income, Residents of EBR Parish 65 years & over

TABLE 6

Monthly Income	Per Cent of Persons Interviewed
$0-99	43.8%
$100-199	21.2
$200-499	21.8
$500 and over	7.0
Not stated	6.2
Average annual income—$1400	

Next the person's own statement of cost of medical care last year is analyzed in Table 7 (Fig. 4).

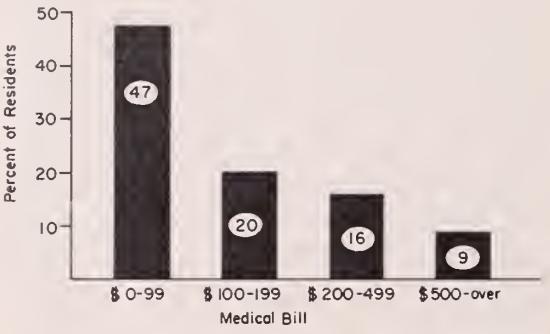


Fig. 4 Annual Medical Expenditure, Residents of EBR Parish 65 years & over

Over half of the persons questioned said they had health insurance (51.2 per cent). Further inquiry about financing of medical care disclosed the fact that among those not having insurance 29 per cent used their own resources while 15 per cent received help from state welfare.

TABLE 7

Annual Amount of Medical Bill	Per Cent of Persons
$0-99	47%
$100-199	20
$200-499	16
$500-999	6
$1000-over	3
Not stated	8
Average annual expenditure on medical care—$100	

Discussion

Because the data from the two private hospitals were on persons of unlike race and economic status separate tabulations were done. It is to be noted that among all older persons admitted to a hospital from this parish, some 13.2 per cent had "free" treatment, 9 per cent at Charity Hospital and 4.2 per cent (estimated) in the private hospitals under the state contract bed arrangement.

Total admissions: The hospital admission rate of parish residents 65 years and over was found to be nearly one-third higher (31 per cent) than that for all residents together. This finding is certainly to be expected. The significant point is that these older people are in fact being taken care of. Charity Hospital furnishes services for predominantly nonwhite persons, while the private institutions admit mostly white patients. However, among East Baton Rouge Parish residents admitted to Charity Hospital in the older age group there are proportionately more white persons than in the all-ages group. This means that more older white persons are eligible for treatment in this institution because of lower income.

It would seem that with an admission rate of 150 per thousand of population the older citizens of this area are being fairly adequately provided for, and with 13.2 per cent of these receiving medical care at public expense the medically indigent are also well taken care of.

Principal diagnosis: It was hoped that

a study of the cause for admission would furnish information on the advisability of establishing either a chronically ill facility or progressive care program in the general hospitals. As expected, cardiovascular renal disease accounted for more admissions than any other. Initial diagnosis and treatment of malignancy was the next most frequent single disease encountered, while emphysema, prostatism, hernia and inflammatory conditions together were principal factors in the largest group tabulated (Table 2). It is not surprising that injuries caused more admissions to the Baton Rouge hospitals because these facilities are immediately available, whereas Charity Hospital is some 75 miles distant.

The most significant difference between private hospital admissions and Charity Hospital admissions is in the category of "Check-up only". One-fifth of private patients were of this type, whereas none of those admitted to Charity Hospital had this form of preventive maintenance. Of course, since Charity Hospital operates a large out-patient department, it is not correct to assume that there is no preventive medical service available to indigent patients whose residence is in this parish. The magnitude of this service cannot be determined from records.

Principal Treatment: It can be seen from Table 3 that the largest segment of older admittees were hospitalized for the purposes of medical treatment, nursing care, and palliative measures. Most of these patients were ill with cardiovascular disease. It is not possible to say whether less intensive treatment than that administered in a general hospital would have sufficed, but it is a good assumption that at least a part of these patients would have been more efficiently handled under some type of progressive management. It is not possible either from a review of the records alone to determine what proportion could be so managed.

Hospital stay: Six out of ten older patients were out of the hospital in a week or less (Table 4). It may be assumed that the ones who stayed for fifteen days or longer may have been better off in an institution for chronically ill, but this group comprised only 191 persons who required 7307 hospital days of care. They could have been provided for by 20 to 25 beds.

Average length of stay in Charity Hospital was about twice as long as that in the two private Baton Rouge hospitals. Since no chronically ill patients are managed at the former institution, the greater stay reflects longer work-up period, and probably the absence of financial incentive to expedite patient handling.

Hospital costs: The average hospital bill for the older person was $258.95. This amount is 18.5 per cent of the average older person's annual income (Table 6). On the average, hospitalization insurance paid one-fourth of this amount. Since only one of every six older citizens was hospitalized last year, a hospital bill of this magnitude would not be an annual expense.

On the other hand, hospital expense did not constitute the only medical bill for the older person. Ninety-two per cent stated that they had medical expenses during 1959 (Table 7). Approximately half indicated that the amount was under $100.00, and two-thirds paid less than $200.00. Nine per cent of these persons had excessively large medical bills, $500 or more for the year.

In meeting medical costs some two-thirds of those interviewed stated that they had medical insurance or had received help from the department of welfare of the state. A few, less than one-third, used their own resources other than insurance to meet the medical expenses.

In interpreting the data relative to income and size of the annual medical bill, it must be kept in mind that these amounts are as stated by the persons interviewed, and were supplied from memory, principally.

Summary

1. The rate of admission of older persons in this parish is 150 per thousand population of the same age. This rate is 1-1/3 times that for the entire population.

2. Cardiovascular renal diseases and malignancy make up one-third of hospital admissions of persons over 65 years in East Baton Rouge Parish.

3. The average length of hospital stay in the private hospitals was 6.9 days, in Charity Hospital, 13 days.

4. The average hospital bill for the older patient was $259.00. This amount does not represent an annual expense, as the admission rate would indicate that only one older person in six required hospitalization last year.

5. According to information obtained by interview the average annual income of the aging in this community is about $1400.00. The average older person spends $100.00 yearly on medical care.

Book Review

The Hypodermic Injection of Morphia. Its Advantages and Dangers. By H. H. Kane, M. D. New York: Chas. L. Bermingham & Co., Medical Publishers.

Few works have issued from the press of more absorbing interest than this of Dr. Kane. There is probably no physician who at some time has not resorted to the use of the hypodermic syringe, and though fortunately, the large majority have never met with any untoward symptoms, still it is an advantage to be reminded in a work like the present, that disagreeable results are possible. We agree with Dr. Kane in his preference for glass syringes, for however perfect the metal ones may be, still the packing will sometimes dry and it is of the utmost consequence to be able to see that our syringes contain the full quantity necessary to be injected. * * *

We would like to make some observations on the graduation of the syringe. Unfortunately, with some few exceptions this is rarely correct. Possessing a large number of hypodermic syringes, we one day tested the graduation and with the following results: In the small instrument made by Gemrig of Philadelphia, we found the 10 divisions correspond to 20 minims. In his large ones the line making 25 minims only equalled 20. In four of Tieman's which we will call A, B, C, and D, in A the 10 line equalled 10 minims, but the 20 line only equalled 15 minims. In B, the 25 line only contained 20 minims. In C, the 10 line only equalled 9 minims, the 20 line only 17 minims, the 15 line was correct. In D, which is the instrument called Green's syringe, all the graduations were correct.

New Orleans M. & S. J. 7:997 (April) 1880.

Panogen, A Geriatric Supplement In the Treatment of the Aged

• Sixty-eight patients, half of whom were on a geriatric preparation, and the other half on a placebo, were studied for five and a half months. Improvement on the whole was noted, as well as in physical, mental, and psychic symptoms.

BENJAMIN O. MORRISON, M. D.
New Orleans

Introduction

AN eminent general said, "Old soldiers never die, they just fade away." The hope of the geriatrician is that neither "old soldiers" nor any of his patients "fade away." There is no universally effective method of treating the symptoms of senility,[1] but there are two popular methods, treatment with analeptics, and treatment with male and/or female hormones. The apparent mechanism of action of analeptics is stimulation of the central nervous system to overcome depression.[2] However, analeptics alone are not completely adequate in the treatment of central nervous system depression. Since the common underlying mechanism in all severe depression of the central nervous system appears to be an interference with the complex metabolism of nerve tissue, the far-reaching effect of endocrine steroids on the functional integrity of various body tissues should be carefully considered.[3]

In our recent study an attempt has been made to investigate the possible advantage associated with the simultaneous administration of hormones and an analeptic agent. The preparation selected for this purpose was the commercially available Panogen,* which features the familiar cerebral stimulant, pentylenetrazol, with estradiol and methyl testosterone. In addition, the formula provides nutritional support in the form of iron, lipotropes and vitamins.

* Panogen was kindly supplied by Smith, Miller & Patch, Inc., New Brunswick, N. J.

Procedure

The old and infirm who live with relatives or friends are a class of patients who look anxiously to the physician for help in making the declining years more attractive and acceptable. But the more serious problem is the occupant of the home for the aged, the nursing home, or whatever name may be chosen for that particular residence where a number of old folks reside. Oldsters who live in small or large groups in homes of one kind or another offer a distinct challenge to the medical profession. Their lot in the last years of their lives is hardly an enviable one at best, and the objective must be to improve it. It follows that the "home" is the most logical place to carry out clinical trials to determine the usefulness of geriatric products. There, the preparation will receive the most severe test of its therapeutic potential. If it improves the mental and/or physical state of the institutionalized patient, it is fair to assume that it will benefit the elderly who live under more favorable circumstances.

With the above in mind, it was decided that the Panogen evaluation should be carried out in three different homes located apart from one another. In effect this would be clinically assaying the preparation in triplicate under closely identical conditions. It would, then, put Panogen to a very severe test under very rigid experimental procedures. The three homes selected for the clinical project were the Lynn Nursing Home and the Saint Joseph Rest or Convalescent Home, both in New Orleans, Louisiana, and the Gulf Coast

Convalescent Home at Biloxi, Mississippi.

When estimating the response of such elderly subjects to treatment intended to improve their physical and mental well-being, it must be borne in mind that subjective observations are an important consideration. Therefore, the design of an evaluation program should be such that the psychological component is kept in proper perspective if a truly impartial survey is to be carried out. This can be accomplished by adoption of the double blind technique whereby the results of therapy with active medication are compared with those noted in comparable patients receiving only placebo treatment. In the study being reported, this type of experimental procedure was rigidly followed. Those in any way involved with the conduct of the program, or with interpretation of the data, knew only that certain patients received "Tablet C," others "Tablet D." It was not until the clinical experiment was terminated and an analysis made of the findings that it became known C was the placebo tablet and D was Panogen.

Initially, 20 patients at each of the three homes were placed in the program. Of these original 60 subjects, 5 were eventually lost through death, and 3 were removed from the project because of intolerance to the experimental preparations An additional 8 persons were chosen as replacements. Thus in the course of the investigation data were obtained on a total of 68 individuals.

Both male and female patients were included in the study. More females than males made up the populations in the homes participating in the study, so a ratio of 2:1, favoring the females, existed throughout the period of investigation. They ranged in age from 39 to 110 years, with a median age of 77 years.

Prior to being placed in the program, each of the selectees presented the typical features so frequently seen in an inhabitant of an old folks home: apathy, poor appetite, decreased vigor, very limited endurance, failing memory, faulty orientation and association, antisocial attitudes, moodiness, and little or no regard for personal appearance. Further, in most cases physical illnesses were present, such as congestive heart failure, Parkinsonism, and Meniere's disease. As would be expected, arteriosclerosis, and cerebral involvements were prominent throughout the two groups. There was little doubt that these were patients who would be difficult to help. By the same token, there was the realization that it would be most encouraging if the treatment regimen should improve their well-being.

Half of the subjects chosen for the study were placed on a daily intake of Tablet C, the other half on Tablet D. Selections were made at random for placement in either C or D group. During the first month of the survey all patients received one tablet t.i.d. Thereafter, the dosage was one tablet daily. On the average, therapy was continued for five and one-half months. The higher daily dosage was employed at the outset of the study in an effort to hasten the response to treatment. However, the principal objective of the program was to determine the effectiveness of daily treatment of aged patients through the simultaneous administration of relatively small amounts of an analeptic agent, the anabolic hormones and complementary nutritional factors. Hence a maintenance dosage of one tablet a day was administered over the greater part of this study.

Results and Discussion

The different data obtained in the study have been incorporated in Tables 1 and 2.

Tables 1 and 2 summarize the findings with respect to the improvement of the patient as a whole. In arriving at the figures recorded in these two tables the respective physical, mental and psychic responses were taken into consideration. This composite grading system was chosen because the overall condition of the patient is a measure of the general usefulness of a geriatric preparation.

The striking thing about the results is the fact that an overall improvement was observed in 47 per cent of the group

TABLE 1
AGES AND SEX DISTRIBUTION OF PATIENTS TREATED WITH PANOGEN (FORMULA D) OR PLACEBO (FORMULA C) FOR AN AVERAGE OF FIVE AND ONE-HALF MONTHS; RESPONSE TO TREATMENT

Age Groups	FORMULA C				FORMULA D			
	Improved		No Change		Improved		No Change	
	Male	Female	Male	Female	Male	Female	Male	Female
Below 40	1			1				
40-50 yrs.		2						
50-60 yrs.	1	1		1	1		1	
60-70 yrs.		1		2	2	3	2	1
70-80 yrs.		5	1	2	5	3	3	2
80-90 yrs.	2	3	2	8	1	3	1	5
90-100 yrs.						1		
Over 100 yrs.				1				
TOTALS	4	12	3	15	9	10	7	8

TABLE 2
COMPOSITE RESPONSE (PHYSICAL, MENTAL, PSYCHIC) TO TREATMENT WITH PANOGEN (FORMULA D) OR PLACEBO (FORMULA C) FOR AN AVERAGE OF FIVE AND ONE-HALF MONTHS

Status	FORMULA C		FORMULA D	
	Number	Per Cent	Number	Per Cent
Improvement	16	47%	19	56%
No Change	18	53%	15	44%
TOTALS	34	100%	34	100%

receiving only a placebo. This accentuates the fact that institutionalized patients could be benefited measurably by the single expedient of receiving a little more personal attention daily. In the course of the study, the subjects were, in effect, given extra consideration. Each day there was special concern for them—seeing that they got their medicine, querying them about their condition, noting the changes taking place. This routine constituted more than customary care and gave the patient the awareness that there was increased interest in him as an individual rather than just as another of an assemblage of dependents. The personalized attention and the psychological effect of the placebo administration combined to produce generalized improvement in a substantial number of patients.

Fifty-six per cent of the group receiving Panogen experienced an overall improvement in the course of the investigation. This would indicate that a dosage of one tablet daily is not sufficient to produce marked benefit in the total health of a large percentage of greatly deteriorated and very elderly subjects. However, since one tablet a day was able to evoke a favorable response in over half the patients treated in this severe test of the product, it might be assumed that a greater daily intake of the preparation would quite favorably affect the well-being of difficult cases. In fact, this was demonstrated in a preliminary study in a Gulf Coast Convalescent Home. On a dosage of two tablets of Panogen daily, 15 of 20 patients (80 per cent) improved appreciably over the course of two months' time. The liquid form of Panogen was similarly effective.

From Table 3 it can be seen that weight gains were registered equally in both

TABLE 3
IMPROVEMENT IN PHYSICAL SYMPTOMS

Symptom	FORMULA C		FORMULA D	
	Number	Per Cent	Number	Per Cent
Weight	20	59%	20	59%
Appetite	20	59%	24	71%
Vigor	16	47%	20	59%
Endurance	13	38%	19	56%

groups of patients. But with respect to the other physical measurements, the Panogen-treated subjects showed the greater progress. This was more pronounced in the areas of appetite improvement and endurance. Presumably this reflects the beneficial action of the anabolic hormones and the nutritional components of the Panogen formula. The improvement in appetite and weight in those receiving the placebo can in part be attributed to the balanced meals served in the three homes where the study was carried out.

To some degree, however, the improvement should be ascribed to the psychological effect produced by the belief the placebo tablet was a true vitamin supplement. Both groups had been advised at the outset of the investigation that they were to receive vitamin tablets. This impression had been created to solicit the complete cooperation of the patients in the clinical program.

Improvement in mental symptoms (Table 4) was quite comparable in each of

TABLE 4
IMPROVEMENT IN MENTAL SYMPTOMS

Symptom	FORMULA C Number	FORMULA C Per Cent	FORMULA D Number	FORMULA D Per Cent
Orientation	18	53%	20	59%
Association	23	68%	21	62%
Memory	13	38%	18	53%

the groups, with respect to the capacity to orient and associate. Memory improvement was greater in the group receiving Panogen. Again, these very old patients would perhaps have shown more marked improvement in mental acuity on a higher daily intake of active medication. Also, the preliminary work with Panogen had shown that mental activity was very favorably influenced on a daily dosage of two tablets.

The most beneficial effects were noted in the psychic symptoms (Table 5). It

TABLE 5
IMPROVEMENT IN PSYCHIC SYMPTOMS

Symptom	FORMULA C Number	FORMULA C Per Cent	FORMULA D Number	FORMULA D Per Cent
Cooperativeness	25	74%	24	71%
Attitude	25	74%	24	71%
Mood	25	74%	24	71%
Personal Care	13	38%	19	56%

seems quite remarkable that an improvement greater than 70 per cent was observed in both test and control groups with reference to cooperativeness, attitude and mood. Greater attention to personal care was exhibited by the patients receiving the tablet containing medication. All patients in the study had been instructed that the vitamin preparation they would be given would help them feel, sleep and eat better. The favorable response seen in the placebo group was undoubtedly due in large part to the psychological impact of these instructions. Here again, the extra attention the patients received perhaps contributed to the marked improvement made in social behavior pattern.

Judging from the data shown in Table 6, Panogen is well tolerated, since the in-

TABLE 6
SIDE EFFECTS ASSOCIATED WITH ADMINISTRATION OF FORMULA C OR FORMULA D

Symptoms	Number of Patients Affected Formula C	Formula D
Constipation	8	9
Eructation	1	2
Nausea	1	2
Insomnia	1	0
Cerebral Anoxia*	1	1
Irritability	2	0
Noisiness	2	1
Anti-social Behavior	2	0
Vertigo	0	1
Increased Tremor	0	1
Confusion	0	1
Diarrhea	0	1
TOTALS	18	19

* Noted on dosage of 3 tablets daily.

cidence of side effects with the true preparation was no greater than it was with the placebo tablet. The power of suggestion is again in evidence here, since 18 of the 34 controls experienced some type of side effect. Yet, the placebo tablet contained nothing more than milk sugar.

No undesirable side effects attributable to the hormone components of the formula were seen in either sex.

Conclusions

It has been rather clearly shown in this study that institutionalized elderly patients respond quite well to individualized attention. Seemingly, if the inhabitant of the home for the aged, or the nursing home, can be made to feel that there is real interest in his personal welfare he will be greatly improved mentally, physically and socially. The fact that over 40 per cent of those receiving placebo tablets showed an overall improvement in well-being demonstrates that the proper application of psychology can accomplish a great deal for the elderly, seriously deteri-

orated patient. It also verifies that in the clinical evaluation of geriatric preparations the psychological component must be fully taken into account, else the interpretation of results may be substantially incorrect.

A placebo can apparently benefit a fair proportion of home patients, but it falls short in several respects, and the longer the period of study the more certain it is that its usefulness will become the less pronounced. Such is not the case with a preparation containing active medication. Had the study reported herein been extended to a year or a year and one-half there is good reason to suspect that the placebo would have shown to less advantage, whereas the geriatric product would probably have maintained its position. It has been proven that aged tissue is less responsive to hormonal action than younger tissue. Therefore, larger dosage and a longer period of time are required to produce the desired results.

Our data support the conclusion that Panogen is well tolerated and that it is therapeutically active. In design it is a logical formula containing complementary drugs that have been established as useful agents in the field of geriatric medicine. It permits the simultaneous administration of an analeptic principle and the anabolic steroids, presenting a dual approach to treatment of the deficiencies of the aged patients. However, from the results of our study, it is concluded that a higher daily dosage of Panogen (2 or 3 tablets a day) would be required to markedly improve the overall well-being of most of the severely deteriorated, very old inhabitants found in nursing homes and homes for the aged. It is suggested that a dosage of one Panogen tablet daily should be reserved for patients who have just entered the classification of old age who have the capacity to respond to smaller amounts of a mood elevating agent and the sexogenic hormones. The product should be ideal as a general purpose geriatric preparation when used in such a manner.

Summary

A study has been conducted, using the double blind technique, to estimate the response of institutionalized elderly subjects to the general purpose geriatric preparation, Panogen. Over a period of five and one-half months on the average, half of a group of 68 male and female patients received Panogen, the other half a tablet containing only milk sugar. For the first month of the program the dosage was three tablets daily. Thereafter, one tablet a day was administered. Improvement in physical, mental and psychic symptoms was recorded during the course of the investigation and the overall improvement in well-being arrived at from these different data.

Surprisingly enough, 47 per cent of the placebo controls were benefited by daily treatment with the placebo tablet. Fifty-six per cent of the Panogen treated subjects improved in total well-being. In certain areas of observation the differences between placebo and active medication were more pronounced.

The findings indicate that more personalized attention to the inhabitants of homes for the aged can measurably improve their physical, mental and social status. The results also stress the importance of taking full cognizance of the impact of the psychological component when evaluating the general usefulness of geriatric products.

The data support the conclusion that Panogen is well tolerated and is a well designed dual-purpose product—presenting an accepted analeptic and the familiar anabolic steroids in the companionship of important nutritional principles. The results suggest that one tablet daily of Panogen should be beneficial to patients just entering the category of old age. But for those of advanced age who are institutionalized, and who are grossly deteriorated, two or three tablets daily would be required to markedly change their situation and elicit a substantial improvement in their total well-being.

Acknowledgment

The author wishes to acknowledge the valuable assistance of the following persons whose services were indispensable in this undertaking:

Mrs. Miriam Hale, secretary, Mr. Stayton Dempsey and Mrs. Ruth Duplessie (deceased), Gulf Coast Convalescent Home; Mrs. Katherine Velyn, and Mrs. Lucile Reynaud of the Lind Nursing Home; Mrs. Elsie Marlett, Mrs. Helen Houston of the St. Joseph Rest Home.

The above named individuals were administrators and nurses in the three convalescent homes. They administered the medication and assisted in the clinical follow-up of these patients. To all of these individuals the author is gratefully indebted.

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Valedictory

The present number closes the seventh volume of the journal and the third under the present management. The assurances of success vouchsafed to us when we embarked in the enterprise have been fully realized, and future prospects are flattering. The circulation has materially increased until the measure of success in the past, warrants further efforts on our part to enlarge its sphere of usefulness.

The large number of foreign exchanges will enable our readers to learn from French, Spanish, Italian, German, Norwegian and Danish journals whatever of practical importance that can be gleaned from them, and conscientious and painstaking translators have charge of this department. The New Orleans Medical and Surgical Association and Orleans Parish Medical Society will continue to publish the valuable papers read at their meetings, and clinical records of importance will be a prominent feature. With the incentive of continued patronage, the editors issue their next number with more than ordinary zeal, and their efforts, as in the past, will be to make the New Orleans Medical and Surgical Journal the exponent of Southern medicine and Southern medical literature.

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The Journal does not hold itself responsible for statements made by any contributor.

Editorial

Citizenship, Physicians and Politics

It is a paradox in the evolution of human society that the more complex it becomes the more trouble it makes for itself and for the individuals who compose it. When human relationships become organized, governments are formed, and it is the fate of successful governments through the ages that they attempt to grow in power, expand in size, and increase in their authority they exercise over the citizens; they then become more restrictive and possibly more corrupt. All this is accomplished in the name of freedom and put into operation under the guise of being constructive and protective. In due course, those who operate the machinery of government acquire a passion to control.

In recognition of this trend and to provide resistance, much advice from statesmen of this nation has been given as a summary of caution. Among these words of warning are such familiar expressions as "the price of liberty is eternal vigilance," "that government governs best which governs least," "the power to tax is the power to destroy," and "the performance of politicians in government is just as good as the citizens who put them there." While such guiding precepts as these are accepted by a thoughtful portion of our nation, our actions as citizens are not in proper accordance with what the precepts require. Consequently, as the socialist expansion of government goes apace, the plans for state medicine are made known. Physicians have resisted such efforts by statements of the facts as we see them, and by personal influence with those in the seats of power. Effective opposition to this trend is becoming more difficult. The physician's personal influence still may be strong in certain areas and with special people, but his community prestige, for various reasons, has diminished. The reason for this has been discussed in these columns before. Proof of the difficulties of our position is apparent.

Legislative measures advocated by or-

ganized medicine may possibly be accepted by those in the seats of power, not because they mean good medicine, but because they mean good votes. We are unable to effect action in our own interests in a manner similar to the labor unions. We have not been able to stop the trend towards state medicine nationally since successive increments of the socialized medicine plan are being enacted each two years. This goes on in spite of the best opposition we can offer. State Boards of Medical Examiners have among their members individuals who are not doctors of medicine. Only four states—Massachusetts, New York, Mississippi, and Louisiana—have been successful in preventing the legal acceptance of chiropractors. Accordingly, the only promising plan for the future is to bring about a situation in which the political influence of doctors will supplement their personal influence in the field of government.

The effectiveness of such political influence is proven by labor's experience. The labor unions are active and authoritative from the smallest precinct unit of political organization to the central councils of each of the national political parties. The result is that leaders of 16 million union members in twenty-seven years have become the arbiters of policy affecting every phase of political economy. Consequently, we have two labor parties and no conservative party.

Business and professional people, including physicians have felt too long that the affairs of government should be left just to politicians. In the last national election, out of 104 million who were qualified by age and citizenship to vote only 76.5 million made themselves eligible and only approximately 48 million actually cast ballots. There should be no surprise that the policies of labor receive sympathetic handling in each of our two labor parties and that measures advocated by business and professional groups, including those for the good of medicine in the broad sense, may be given only a courteous hearing. Physicians appearing in such a role are made to feel that logic and personal influence are weak when put against votes.

Professional groups recognize these facts but have been slow to act on the lesson that they teach. Business organizations are also aware of the ineffective position they occupy. In many areas of business activity, efforts are being made to correct this state of impotence. Three fourths of the business corporations of this country are attempting to make effective citizens out of all of their employees by encouraging them to register, reflect upon political issues, and vote. If physicians as agents working in the interest of organized medicine, but not officially a part of it, and as individuals, utilize their opportunities as citizens they would no longer be ineffective in their advocacy of what is good for medicine and for the nation. The proper degree of influence and the proper reception for such measures as we would advocate will only come when the physician is a member of his precinct organization and gives time and money to its activities. Under such conditions, he will know whereof he speaks. He will have support from his fellow citizens and be in a position in his practice to discuss effectively the proper relationship between government and medicine.

There are many communities over the nation where physicians have taken time to explain the issues and the dangers of state medicine to their patients. Their efforts have been rewarded by retiring politicians antagonistic to our interests. Under conditions of proper organization, physicians can acquire enough influence to properly protect medical practice.

The time for such effort is now.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

WORLD MEDICAL ASSOCIATION: U. S. COMMITTEE, INC.

Since the World Medical Association represents the best in medical practice throughout the world, and places its members in a position to create good public relations between the physicians of all nations, we would recommend very strongly membership to all our members. This is an organization recommended and participated in by the American Medical Association. In fact, its President at the present time is none other than Dr. Austin Smith, who was the editor of the Journal of the AMA for many years, and its director is Dr. Louis Bauer, one of our recent past presidents of the American Medical Association.

This organization is independent of Government, and is not subsidized, but is an organization through which membership offers great opportunities for free association and contact with physicians in all countries, thereby, creating great potentialities for international good will with members of the medical profession throughout the world.

It merits your support and some day, this organization may help soften the ill feeling which now exists among nations by its members acting as good professional diplomats.

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A complete list of Chairmen and personnel of all respective committees will be published in the next issue of the Journal.

MEDICARE PROGRAM

The Medicare Contract, in accordance with the action of our House of Delegates, will not be renewed, after the termination of the present contract which expires on August 31, 1960, but the program will continue in Louisiana without the approval, control or sponsorship of the Louisiana State Medical Society. Louisiana will be one of the four (4) states—Ohio, Rhode Island, and Texas in which the Medicare Program will

be conducted without being sponsored by a State Medical Society. The program is, at the present time, sponsored by all other states with their approval and participation, as an organization.

We venture to predict that, the fees for many of the procedures will be reduced, with denial of privileges now enjoyed by its present operation with the State Society's cooperation, participation, and control.

All controversial and special report cases will, now, be forwarded to Washington for evaluation. They will no longer be handled by our members through District or Area State Medicare Sub-Committees, who are familiar with local conditions, and practices, thereby, protecting fees now allowed in the Schedule of Fees for our State.

Of course, this will not mean much to the physicians who do not treat these cases, but those physicians who have been participating in the program, may feel that they have been short measured in the future.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

SEMINAR

"Advances in Pediatric Therapy"
Sponsored by
Louisiana Chapter, American Academy of Pediatrics, and American Academy of General Practice
(Five hours credit as Category I for American Academy of General Practice)

Date: Friday, September 23, 1960
Registration: 8:00 - 9:00 A.M.
Place: Roosevelt Hotel, New Orleans, Louisiana

9:00 A.M.

Dr. Edward Curnen, Professor of Pediatrics, University of North Carolina, Former Chairman of Committee for Control of Infectious Diseases of American Academy of Pediatrics.
"Immunization Procedures in Children."

9:40 A.M.

Dr. Robert Denton, Assistant Professor of Research Anesthesia, Departments of Anesthesia and Pediatrics, University of Pennsylvania.
"Aerosol Therapy in Chronic Pulmonary Disease of Children."

10:40 A.M.

Dr. Alex J. Steigman, Professor of Pediatrics, University of Louisville; Chairman of Committee on Control of Infectious Diseases of American Academy of Pediatrics.
"Treatment in Viral Disorders."

11:20 A.M.

Free Discussion and Questions: Drs. Curnen, Denton, Steigman

NOON.

— Luncheon —

Speaker: Dr. Milton H. Erickson, President, American Society of Clinical Hypnosis. Editor, American Journal of Clinical Hypnosis.
Topic: "Hypnosis in Medicine."

2 P.M

Dr. C. Everett Koop, Surgeon-in-Chief, Children's Hospital of Philadelphia.
"Cryptorchidism: A Logical and Embryological Approach to Management."

2:40 P.M.

Dr. Maxwell Finland, Associate Director, Thorndike Memorial Laboratory, Boston City Hospital.

"Rational Use of Antibiotics."

3:40 P.M.

Dr. Robert B. Lawson, Professor of Pediatrics, University of Miami.

"Practical Use of Steroids in Childhood."

4:20 P.M.

Free Discussion and Questions: Drs. Koop, Finland, and Lawson.

Supported by Grant-in-Aid, The Sharp & Dohme Post Graduate Program.

UROLOGY AWARD

The American Urological Association offers an annual award of $1000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to Urologists who have been graduated not more than ten years, and to hospital internes and residents doing research work in Urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Biltmore, Los Angeles, California, May 22-25, 1961.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland, Essays must be in his hands before December 1, 1960.

OVERWEIGHT IS NATION'S BIGGEST HEALTH PROBLEM

The nation's biggest health problem today is overweight, Dr. E. Vincent Askey, Los Angeles surgeon who will take over the presidency of the American Medical Association this month, said recently when he was interviewed by four women in an across-the-table question-and-answer conference.

The questions and answers, which appear in the June issue of Today's Health, published by the A.M.A., ranged from obesity to Russian medicine.

Dr. Askey, who will be inaugurated as president of the A.M.A., June 14, at the annual meeting in Miami Beach, answered on-the-spot questions about any phase of health which were asked by the following four women at a conference in Chicago:

Mrs. Ron Jakes, homemaker and former school teacher, Elgin, Ill.

Miss Norma Lee Browning, feature writer for the Chicago Tribune.

Mrs. W. A. Hastings, past president, National Parent Teachers Association, Madison, Wis.

Mrs. Norma Matthews, homemaker and former newspaper woman, Des Moines, Iowa.

One interviewer asked Dr. Askey, a 64-year-old Pennsylvania-born physician, what he considered was "the most important health problem facing the country today."

"Weight control," was his quick answer. "We Americans are eating more and better than ever but exercising less. As a result, actuarial statistics show that an alarmingly large number of persons are seriously overweight, and obesity and long life usually don't go together."

On the question of relationship between smoking and cancer, Dr. Askey answered:

"My personal opinion is that there is a definite link between cigarette smoking and the development of lung cancer. I'm not sure, however, whether it's the whole cause or just one factor among the other lung irritants we are exposed to, such as automobile exhaust fumes and pollutants from factory smokestacks."

Dr. Askey revealed that he did not believe the Russians are "up to our standards in medicine."

"There may well be isolated fields in which they've done something we've not yet been able to do. For example, they probably have made certain important advances in the field of space medicine. But in terms of medical advances and progress which affect the total population and not just a special segment, I believe that our brand of medicine is of much higher quality."

On the question of hospital costs, Dr. Askey said that " 'costs' in a hospital are largely the costs for service—in other words, labor.

"In the old days, many employees worked 12-hour shifts or longer. Nowadays, and rightly so, most hospitals have three eight-hour shifts, five-day weeks, with double pay for week-ends and holidays. Obviously, this is one ever-increasing expense that hospital bills try to cover.

"Also, hospital costs vary, depending on the needs of the patient. It's impossible to talk about costs in terms of a certain charge per day as you would with a hotel. . . . Many of our finest hospitals are plagued by yearly deficits as the actual services rendered are far beyond the so-called 'high-cost' of hospital care."

In discussing the fields of general practice and that of specialists, Dr. Askey said that "the tremendous scientific developments in medicine have made it absolutely necessary for us to have specialists," but he added that "the biggest medical mistake many people make is not having a family physician—a man they can rely upon for general advice."

"The family doctor," he said, "can treat about 85 or 90 per cent of the illnesses we know and when he can't he will recommend the right specialist or consultant."

One interviewer asked Dr. Askey this question:

"With the fantastic increase in population at both ends of the life scale, is the supply of physicians keeping pace with the country's growing medical needs?"

Dr. Askey answered:

"That's certainly a timely question. Up to now, doctors of medicine have increased at about

the same rate as the population. Moreover, the efficiency of the doctor has increased, too, so that with new drugs and techniques he can treat greater numbers of patients in less time. At one time, for example, it wasn't unusual to keep a patient in the hospital for three or four weeks after a major operation. Now he's out in five or six days.

"However, we do know that by 1970 we will have to increase not only the number of doctors but the number of medical schools graduating new physicians if we want to stay abreast of population growth. The A.M.A. is tremendously active in this area and is studying possible sites for the 10 to 14 new schools we'll need and also ways of enlarging present facilities.

"But you can't graduate good doctors unless you have a good faculty. We could build 30 or 40 new medical schools, but without an efficient and skilled faculty they'd not be of much use. So we are also trying to recruit and encourage the type of student who would be a good teacher."

HEART ATTACKS FOUND IN AS MANY WOMEN AS MEN PAST 50

Heart attacks are as common among women as men beyond the age of 50, according to an autopsy study at three large medical centers in widely separated geographical areas.

A total of 13,485 autopsies performed at Barnes Hospital, St. Louis, Massachusetts General Hospital, Boston, and Radcliffe Infirmary, Oxford, England, were analyzed by Drs. Fairfield Goodale, Hanover, N. H., and Wilbur A. Thomas and Robert M. O'Neal, both of St. Louis.

The findings, reported in the June Archives of Pathology, published by the American Medical Association, showed the incidence of heart attacks "is equal in men and women past 50 years of age."

Of the 13,485 autopsies, heart attacks were found in 1,372. Only 154 of the 1,372 occurred in persons under 50.

Among those under 50, heart attacks were more prevalent in men than women by a two-to-one ratio.

The study confirmed a similar report made in 1956 which was based on autopsies performed only at Barnes Hospital.

"Because of the undoubted selection of patients that occurs in any single medical center, the study was extended to two other institutions, confirming the results of the initial study," the authors said.

In the latest study, the incidence of heart attacks found at autopsy at Barnes was compared with the incidence of diagnosed heart attacks among patients discharged alive from the hospital.

In the group of discharged patients, the overall incidence of heart attacks among men was three times that among women. In the under-50 group, the ratio of men to women was 12 to 1.

This "remarkable preponderance" of men discharged with diagnosed heart attacks, six times as great a ratio as that found in autopsied patients of the same age, suggests that the diagnosis is less obvious in young women than in men, perhaps solely because the possibility of the diagnosis is not often entertained in young women, the researchers said.

Autopsies provide objective, accurate information regarding the cause of death, they pointed out, whereas most diagnoses are at best educated guesses.

However, they said, "great caution is necessary in using data derived from autopsies for drawing conclusions regarding the general population because immeasurable factors of selection are present."

STAPHYLOCOCCI RESISTANCE TO PENICILLIN SHOWS NO RISE

The resistance of staphylococci bacteria to penicillin has remained virtually constant during the past five years, a study showed today.

The study was reported by three Seattle physicians in the June 4 Journal of the American Medical Association.

Staphylococci cause the majority of superficial, pus-forming infections in man and also are responsible for certain infections of the lungs, long bones, and kidneys. In recent years, staphylococcal infections have assumed increasing importance because of a tendency to become resistant to antibiotics.

Several years ago studies in many parts of the world revealed that more than half the strains of the staphylococcus family found in hospitalized patients were resistant to penicillin, streptomycin, and tetracycline, the Journal commented editorially.

"This led to the fear that staphylococcic infections would become untreatable because of the development of resistance to each new antibiotic as it appeared," the editorial said.

The study reported by Drs. Alfred W. Bauer, David M. Perry, and William M. M. Kirby showed that within the period 1955 through 1959 resistance to penicillin changed but little from the level of 60 to 80 per cent previously recorded.

Resistance to streptomycin remained stable at about 55 per cent, they reported.

The study also confirmed reports that chloramphenicol had much less effect in inducing the emergence of resistant strains than did the other antibiotics tested.

The findings also supported the concept that the greater the amount of a drug consumed the

greater the likelihood of encountering resistant strains.

The study was conducted among patients hospitalized and treated at King County Hospital in Seattle using a technique whereby a given staphylococci germ could be tested for its resistance against 12 to 15 antibiotics.

The Journal editorial pointed out that when an infecting organism is resistant to penicillin, streptomycin, and tetracycline, the physician still has other drugs to choose from, among them chloramphenicol.

"Studies of this sort are of great interest, but do not settle the question whether restriction of various antibiotics should be a routine policy in hospitals," the editorial concluded. "It is rather doubtful whether, aside from use of antibiotics only where they are actually indicated, the restriction of any one or a group of antibiotics is necessary at present."

SYMPOSIUM CORONARY ARTERY DISEASE

"The University of Texas Postgraduate School of Medicine is pleased to announce a comprehensive symposium on Coronary Artery Disease scheduled for November 28 through December 2, 1960. The symposium will be held in the Texas Medical Center, Houston, Texas, and the program will be presented by six outstanding guest lecturers augmented by a local faculty. As in previous programs, extensive use will be made of the clinical facilities of a number of local participating institutions.

This five-day program has been approved by the Academy of General Practice for Category I Credit. No tuition will be charged; however, for those physicians desiring AAGP credit a $5.00 registration fee will be charged.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

GRISEOFULVIN TESTED IN ARTHRITIC AILMENT

Griseofulvin, an antibiotic proved effective against certain skin infections, is being used to treat an arthritic ailment.

The new development was reported by Drs. Abraham Cohen, Richard Daniels, and William Kanenson, all of Philadelphia, and Dr. Joel Goldman, Johnstown, Penn., in the June 4 Journal of the American Medical Association.

They said they had achieved good results in 12 patients suffering shoulder-hand syndrome, a disease that affects the nerves and circulation, and is characterized by pain, tenderness, and limitation of movement of the shoulder, hand, and fingers.

"We are unable to give a scientific explanation for our findings," the physicians said. "This is a preliminary report in the hope that others might use this method to either confirm or refute our findings."

The four physicians said they experimented with griseofulvin after noting that when it was used to treat fungus infections of the skin any inflammation associated with the infection disappeared along with the infection.

Proceeding on the theory that the antibiotic was an anti-inflammatory agent, they began administering it to patients with rheumatoid arthritis, including those with shoulder-hand syndrome.

Although those with shoulder-hand syndrome benefited, those with rheumatoid arthritis did not.

The physicians said this led them to believe that griseofulvin was not an anti-inflammatory agent.

Dr. Cohen is director of the Arthritis Clinic at Philadelphia General Hospital. The co-authors also are associated with General Hospital.

RESEARCHERS TO CONDUCT PSYCHOSOMATIC INVESTIGATION

The Department of Psychiatry and Neurology of Tulane University is conducting a psychosomatic investigation of families in which more than one member of the **immediate** family has had proven duodenal ulcer. If you know of any such families who would be willing to cooperate with the team of researchers, please communicate with Harold I. Lief, M. D., 1430 Tulane Avenue, New Orleans 12, Louisiana.

COURSE IN POSTGRADUATE GASTROENTEROLOGY

The American College of Gastroenterology announces that its Annual Course in Postgraduate Gastroenterology will be given at the Bellevue-Stratford Hotel in Philadelphia, Pa., on 27, 28, 29 October 1960.

The faculty for the Course will be drawn from the medical schools in and around Philadelphia. The subject matter to be covered in the Course, from a medical as well as surgical viewpoint, will be essentially, the advances in diagnosis and treatment of gastrointestinal diseases and a comprehensive discussion of diseases of the mouth, esophagus, stomach, pancreas, spleen, liver and gallbladder, colon and rectum. There will be a clinical session at the Albert Einstein Medical Center and again this year, in addition to individual papers, there will be panel discussions and CPC's of interest.

For further information and enrollment write to the American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

BOOK REVIEWS

Surgical Pathology; by Loren V. Ackerman, M. D., Professor of Surgical Pathology and Pathology, Washington University School of Medicine, St. Louis, Mo.: Surgical Pathologist, Barnes Hospital and Affiliated Hospital, St. Louis, Mo.: Consultant to the Armed Forces Institute of Pathology: In collaboration with Harvey R. Butcher, Jr., M. D., Associate Professor of Surgery, Washington University School of Medicine, St. Louis, Mo., Ed. 2, St. Louis, Mo., The C. V. Mosby Co., 1959, pp. 1096; illus. 1114. Price $15.00.

The second edition of Dr. Ackerman's *Surgical Pathology* has been revised by the author in collaboration with Dr. Harvey R. Butcher who is a surgeon. Dr. Butcher has written the section on Wound Healing and the chapter on Vessels while the section on non-neoplastic conditions of the skin by the late Dr. Zola K. Cooper has been revised by Dr. Robert Ogilvie. Other contributors are Dr. David E. Smith, who has revised and expanded his chapter on the Central Nervous System and Dr. L. E. Zimmerman who has contributed a new chapter on Surgical Pathology of the Eyes and Occular Adnexa. The new edition is expanded from 836 to 1096 pages and costs $15.00. The type and general format are little changed but 201 new illustrations have been added.

Surgical pathology, as generally understood, encompasses those disorders in which surgery has some therapeutic or diagnostic benefits to offer. As such it excludes virtually all the "non-surgical" conditions that every surgeon is bound to encounter. To this extent a book on surgical pathology fails to meet the full needs of a surgeon or, for that matter, of a pathologist who examines the tissues removed by surgeons. It might even be questioned whether "surgical pathology" deserves recognition as a sensible subdivision of pathology. On similar grounds one might propose a subspecialty of pharmacologic pathology devoted to diseases for which medication is ordinarily prescribed.

Dr. Ackerman, like the vigorous protagonist he is, opens his book with a plea for separate departments of surgical pathology in large medical centers. This takes the form of unfavorable reflections on the erroneous diagnosis and reporting of surgical specimens "in the past". He promptly clarifies or perhaps obscures his position by remarking that "the surgical pathologist must continue to haunt the post-mortem table". In other words, the separation Dr. Ackerman advocates appears to call for some sort of psychological emancipation from general pathology rather than the actual division of skills ordinarily implied by subspecialization.

All this to the side, Dr. Ackerman's second edition is an excellent and useful book. It is written in the direct and forceful style for which its author is well known. The book reflects Dr. Ackerman's broad knowledge and competence in the field of neoplastic diseases sometimes at the expense of other important disorders. For example, the 36 page chapter on soft tissues is devoted exclusively to neoplasms except for 19 lines of "infections" and 6 lines on "pilonidal disease". In many chapters on specific organ systems the space devoted to neoplasms exceeds that given to all other disorders combined. In this regard a simple page count gives an unfair measure of coverage since, in general, the sections on neoplasms are the most copiously illustrated. It is also true that the recognition and identification of tumors is among the most valuable contributions a pathologist makes in the management of surgical patients and it may be that the emphasis placed upon neoplasms is intentional. Dr. Ackerman's style is direct and forceful. His views on controversial matters are presented without much attention to alternative possibilties but are gneerally sound.

The revised chapters on the skin by Drs. Cooper and Ogilvie, on vessels by Dr. Butcher and on the nervous system by Dr. Smith are well done. Dr. Zimmerman's new chapter on occular pathology deals with a broad range of lesions and is copiously illustrated. Without detracting in any way from the excellence of this chapter the balance of coverage is upset by devoting some 10 per cent of the entire volume to disorders affecting one of the organs of special sense.

The book is beautifully and abundantly illustrated throughout. It is concise, informative, well written, and a credit to the author and his collaborators. It will be valuable not only to pathologists and surgeons but will also serve as a general reference particularly in the field of neoplastic disease.

CHARLES E. DUNLAP, M. D.

Communicable and Infectious Diseases; by Franklin H. Top and Collaborators, 4th Edition, St. Louis, C. V. Mosby Company, 1960, pp. 784. Price $20.00.

This new edition of an established text is the work of many authors and covers a wide field of knowledge about disease due to microbial agents. The expressed intention to be a text or handy reference for all professional personnel concerned with certain communicable diseases is reasonably fulfilled. The illustrations, indexing, format, and presentation of selected and purposely limited reference material are good features of the book. With regard to the quality of organization and validity of the material there are great differences between one chapter and another. Thus for example, the chapter on Meningitis seems poorly organized

and confusing as is the chapter on Infectious Encephalitis. On the other hand, in many chapters the information is presented clearly and accurately and in accordance with latest information. Such chapters include those on Influenza, Enteroviruses, and Viral Hepatitis.

T. E. FROTHINGHAM, M. D.

Medical Department, United States Army, Surgery in World War II. Neurosurgery, Volume II. Prepared and published under the direction of Major General S. B. Hays, The Surgeon General, United States Army; Editor in Chief, Colonel John Boyd Coates, Jr., M. C.; Editors for Neurosurgery, R. Glen Spurling, M. D., and Barnes Woodhall, M. D.; Associate Editor, Elizabeth M. McFetridge, M. A. Washington, D. C., Office of the Surgeon General, Department of the Army, Washington, D. C., Government Printing Office, 1959, pp. 705, illustrated. Price $7.00.

This volume, the second of the two neurosurgical volumes in the history of the U. S. Army Medical Department in World War II, has appeared a little over a year after the first. Like the first, it was prepared in 1947, but its publication was delayed for the same reason, a basic disagreement between its editors and the administrative personnel of the Historical Division, Office of the Surgeon General, which then did not consider clinical material true history. It is fortunate that this point of view was eventually overruled. It would have been extremely unfortunate if his book had not been published.

The first of the neurosurgical volumes was devoted to the administrative considerations of military neurosurgery and to head injuries. This volume is devoted to spinal cord injuries and peripheral nerve injuries. Sweeping as the generalization may sound, the statement can fairly be made that if any physician desires to know how to manage either of these injuries, this is the book for him to consult.

This reviewer has never read a finer description of the management of casualties with spinal cord injuries after they have become paraplegics, with all that the term implies. It is easy to find good descriptions of the management of acute spinal cord injuries. The real heartbreak, for neurosurgeons as well as for their patients, comes later. All of the details of later care are here: the management of complications, including urologic complications and decubitus ulcers, the latter in unusual and helpful detail; the control of pain and spasm; diet and nutrition; exercises leading to ambulation or at least a wheelchair life; the importance of careful records every step of the way.

The purpose of the whole program was to give the patient a purpose in life. His physical rehabilitation was directed to that end. This involved the infinitely important relation of physician and patient, which was cherished and fostered even in the atmosphere of a military hospital. In some ways it was probably the background of the whole program. The passionate devotion of the neurosurgeons and all who assisted them to care for these patients illuminates every page of this chapter. This was scientific management, it is true, but science combined with compassion, and compassion that stopped well on this side of maudlin sentimentality. These terribly afflicted soldiers were kept alive as men whose self-respect had been preserved and who had been given something to live for.

The section on peripheral nerve injuries is similarly complete. Pathology; anatomy; every phase of surgical management, including the futility of nerve grafts and the usefulness of early nerve suture; evaluation of results; the auxiliary help which an orthopedic surgeon can offer in nerve injuries which once would have been given up as hopeless; physical therapy—all are completely handled. This is not an atlas, but no atlas contains a finer description of the regional anatomy of peripheral nerves and the approaches to, and techniques of repair of, peripheral nerve injuries than the chapters by Wells and his associates and by Whitcomb. The follow-up study of peripheral nerve injuries by Woodhall and Beebe (*Peripheral Nerve Regeneration*, U. S. Government Printing Office, 1957) is the proof of the success of these policies.

This volume is exactly what it purports to be, the story of the approach to mass casualty loads of spinal injuries and peripheral nerve injuries. The coverage is over-all. Industrial accidents and automobile accidents in these areas could be competently treated from this book.

Everything that was said about the first of these neurosurgical volumes can be said in even fuller measure about the second. The selection of authors is as discriminating as in the first volume. The 293 illustrations, including 12 color plates, are beautifully reproduced on fine quality of paper. The typography is attractive. The documentation is unobtrusive; as in the first volume, the authors and editors speak with the authority of the men who helped to create the data they are reporting. The 54-page index is all-inclusive. The text is both lucid and interesting. As was said of the first book, such results do not just happen. They require careful planning and very hard work on the part of many people. As in the first book, the time and effort were well spent.

It would be a great pity if this book and the others in this historical series, those already published and those still to be published, were not utilized as they deserve to be. The usefulness of the Civil War histories was never fully realized. Now they are collector's items. The World War I histories suffered the same fate and are

also becoming collector's items. These World War II medicomilitary histories are already classics and they should be utilized as such.

RAEBURN C. LLEWELLYN, M. D.

Textbook of Otolaryngology; by David D. DeWeese, M. D., and William H. Saunders, M. D., St. Louis, The C. V. Mosby Company, 1960, pp. 464. Price $8.75.

This textbook of otolaryngology is designed primarily, according to the authors, for the medical student and the general practitioner. Anatomy and physiology are presented only incidentally, and the chief emphasis is on diagnosis. Approved medical and surgical therapy for the various otolaryngologic conditions and diseases is, however, discussed in sufficient detail for the purposes of the text.

The section on physical examination (chapter 1) is recommended to all medical students, who would profit by studying it carefully. It is clear, detailed, informative, practical, and excellently illustrated. Particularly useful are "the beginner's most common mistakes," which are not always confined to beginners. It would, in fact, pay more experienced practitioners to turn the pages of this chapter, pick them up, and meditate on them. We all grow careless.

The chapters devoted to the ear are especially good, if only because they set forth what is being done today, and what can be done, in otologic conditions. This is a field in which many general practitioners and other physicians are often surprisingly ignorant.

There are excellent separate chapters on the physiology of hearing (19); audiometry (20); hearing losses (25); the child with speech difficulties (27); and rehabilitation of deafened patients (28). The chapter on hearing losses properly emphasizes noise-induced hearing losses, which are of ever increasing industrial importance. It is unfortunate that these chapters are not placed consecutively or at least cross-referenced. They are inter-related, and the busy physician, reading one of them, might miss others. The terms currently used in describing hearing difficulties, such as sensory-neural hearing loss, dysacousia, and similar terms should have been explained. Reference might also have been made in the selected readings appended to the chapter on rehabilitation to the detailed description of the aural rehabilitation program set up during the war, which appears in the World War II Army Medical Department history. This was the first coordinated program of the kind, and the chapter is by L. E. Morrissett, who, as Major Morrissett, MC, USA, set it up and supervised it.

The mention of allergy is surprisingly brief. The selected readings on numerous subjects, as just intimated, might profitably have been expanded in a number of areas. An 8-page index can scarcely be considered adequate for a book of 455 pages, and sampling shows that it is by no means as useful as it should be.

This is, however, an attractively produced book, lavishly illustrated, clearly written, and on the whole an excellent introductory text for the medical student and a good reference book for the general practitioner.

J. W. MCLAURIN, M. D.

Your Heart a Handbook for Laymen; by H. M. Marvin, M. D., Garden City, New York, Doubleday & Co. Inc., 1960, pp. 335. Price $13.50.

Dr. Marvin covers very comprehensively the anatomy and physiology of the cardiovascular system, as well as the more common diseases affecting these organs. He discusses in detail the etiology, clinical manifestations and treatment of the various cardiovascular diseases, in addition to influencing factors such as obesity, smoking, heredity. The principle and use of various diagnostic tests such as the electrocardiogram, flouroscopy, cardiac catheterization are brought out.

I have two criticisms: One is that the book is so written that only the more intelligent patient could derive benefit, and second, that all the controversies of treatment are discussed in such a manner that the patient would be very likely to question the choice of his therapy, particularly if he has symptomatic advanced disease.

In the properly selected intelligent patient, this book would be of value in patient management.

ROBERT BURCH, M. D.

PUBLICATIONS RECEIVED

Funk and Wagnalls, N. Y.: Medicine Today, A Report on a Decade of Progress, by Marguerite Clark.

Grune & Stratton, N. Y.: Radiation, Use and Control in Industrial Application, by Charles Wesley Shilling, M. D.

Philosophical Library, N. Y.: The List Method of Psychotherapy, by Elizabeth Sher, Eleanor Messing, Theodora Hirschhorn, Enis Post, Annette Davis and Arthur Messing, with an introduction by Jacob S. List.

W. B. Saunders Co., Phila.: Current Surgical Management II, A Book of Alternative Viewpoints on Controversial Surgical Problems, edited by John H. Mulholland, M. D., Edwin H. Ellison, M. D., and Stanley R. Friesen, M. D., with contributions by 50 authorities; Office Diagnosis, by Paul Williamson, M. D.

Vantage Press, Inc., N. Y.: Medical Research and the Death Penalty, by Jack Kevorkian, M. D.

The Williams & Wilkins Co., Balt.: Diseases of the Skin, by James Marshall, M. D.

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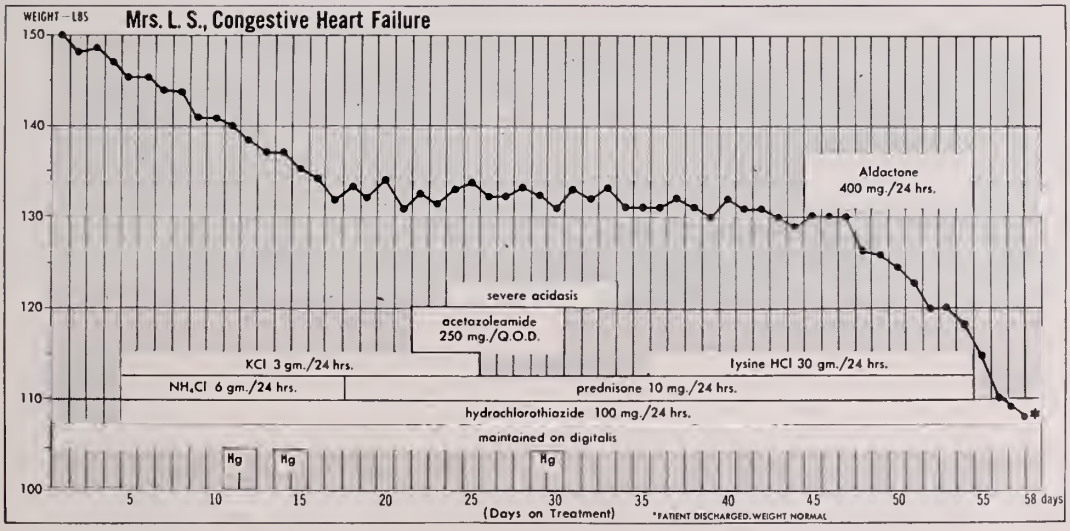
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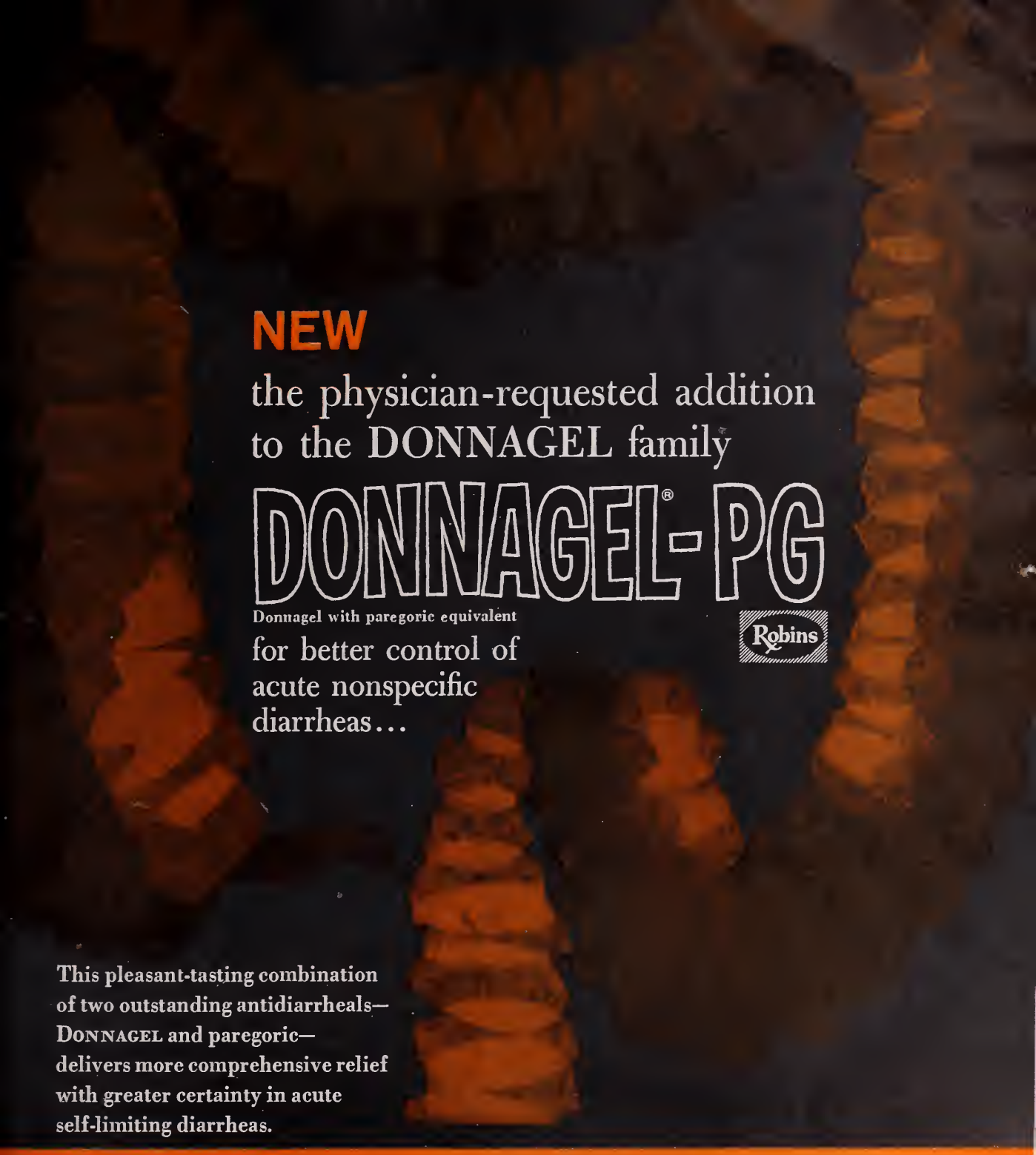
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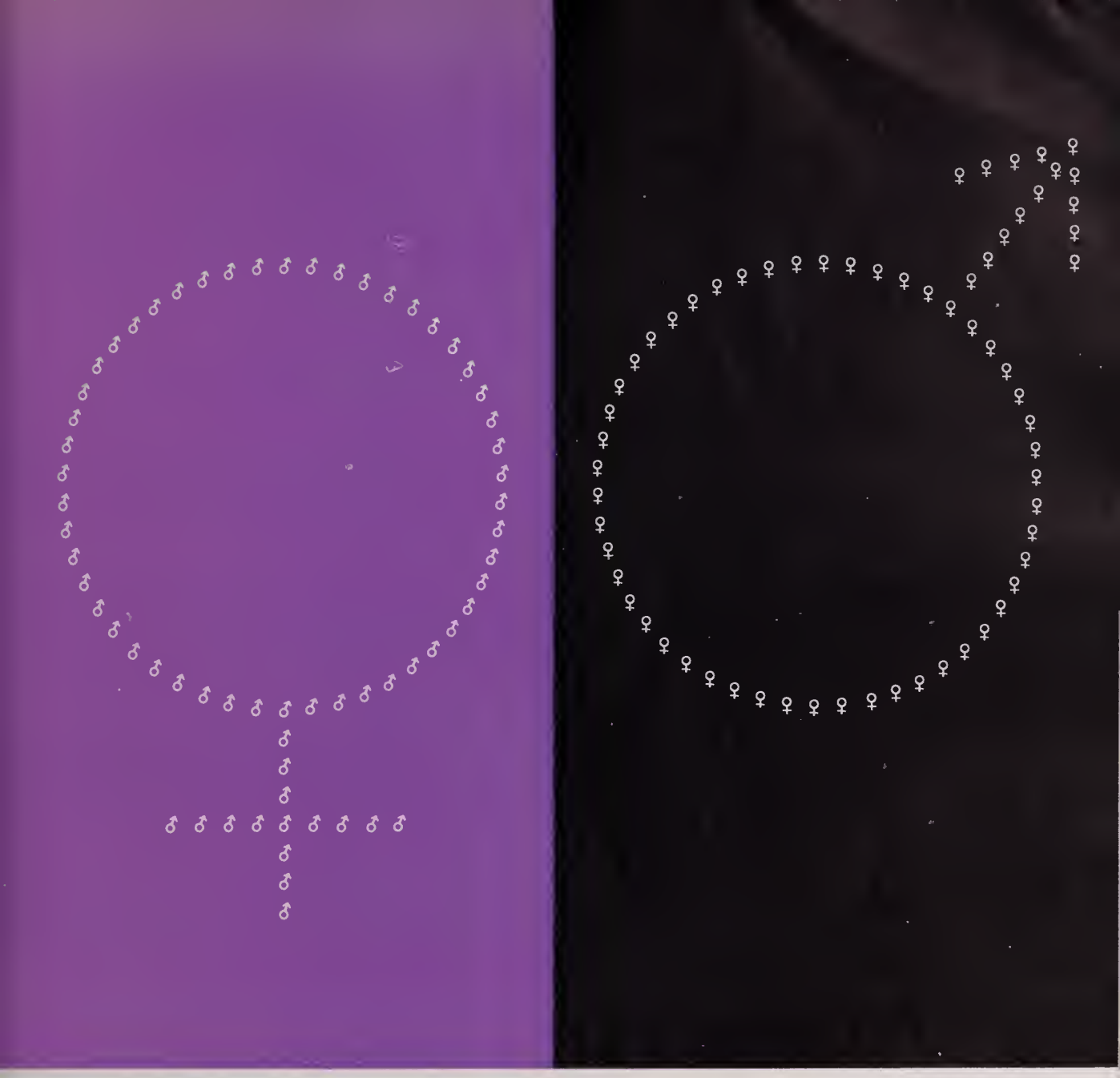
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* Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. 6:108 (Feb.) 1959.

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Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

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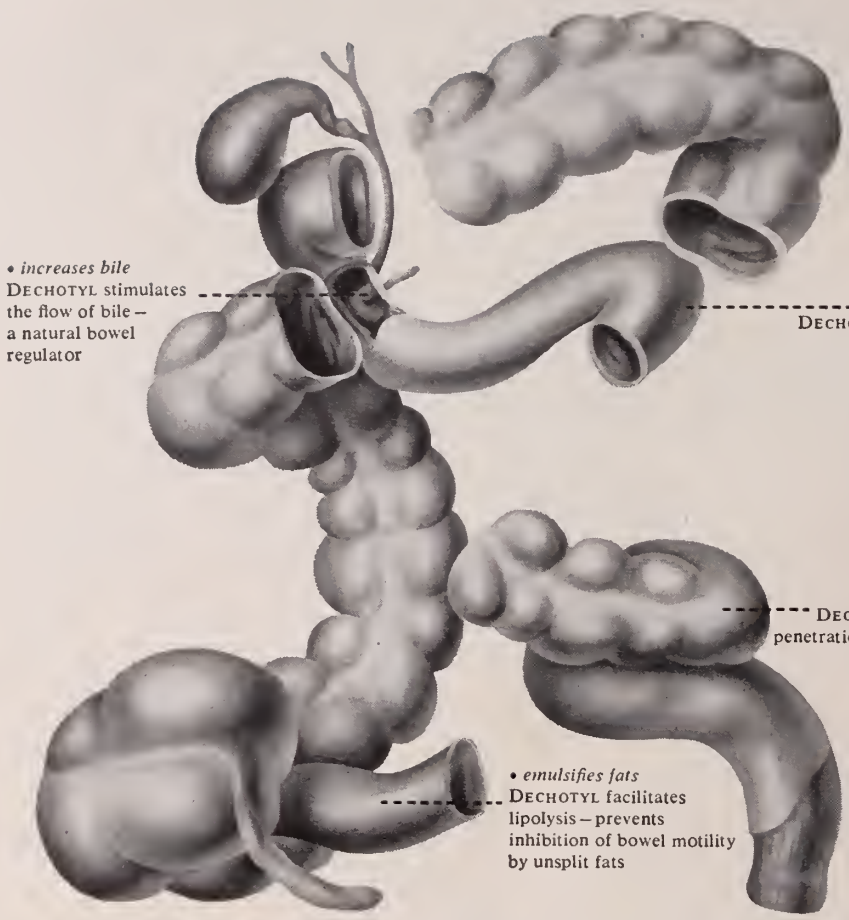
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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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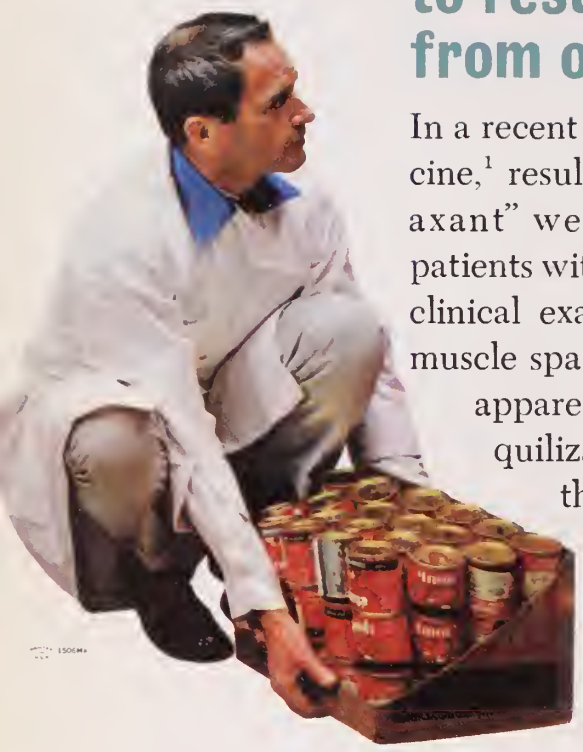
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Trancopal enables patients to resume their duties in from one to two days.



In a recent study of Trancopal in industrial medicine,[1] results from treatment with this "tranquil-axant" were good to excellent in 182 of 220 patients with muscle spasm or tension states. From clinical examination of those patients in whom muscle spasm was the main disorder, ". . . it was apparent that the combined effect of tranquilization and muscle relaxation enabled them to resume their normal duties in from twenty-four to forty-eight hours. . . . It is our clinical impression that Trancopal is the most effective oral skeletal muscle relaxant and mild tranquilizer currently available."[1] Side effects occurred in only 12 patients, and: "No patient required that the dosage be reduced to less than one Caplet three times daily because of intolerance."[1]

Clinical results with *Trancopal*®[1]

	Excellent	Good	Fair	Poor	Total
LOW BACK SYNDROMES					
Acute low back strain	25	19	8	6	58
Chronic low back strain	11	5	1	1	18
"Porters' syndrome"*	21	5	1	1	28
Pelvic fractures	2	1	—	—	3
NECK SYNDROMES					
Whiplash injuries	12	6	2	1	21
Torticollis, chronic	6	2	3	2	13
OTHER MUSCLE SPASM					
Spasm related to trauma	15	6	1	—	22
Rheumatoid arthritis	—	18	2	1	21
Bursitis	2	6	1	—	9
TENSION STATES	18	2	4	3	27
TOTALS	112 (51%)	70 (32%)	23 (10%)	15 (7%)	220 (100%)

*Over-reaching in lifting heavy bags resulting in sprain of upper, middle, and lower back muscles.

Dosage: **Adults, 200 or 100 mg. orally three or four times daily.**
Relief of symptoms occurs in from fifteen to thirty minutes and lasts from four to six hours.

How Supplied: Trancopal Caplets®
200 mg. (green colored, scored), bottles of 100.
100 mg. (peach colored, scored), bottles of 100.

1. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960.

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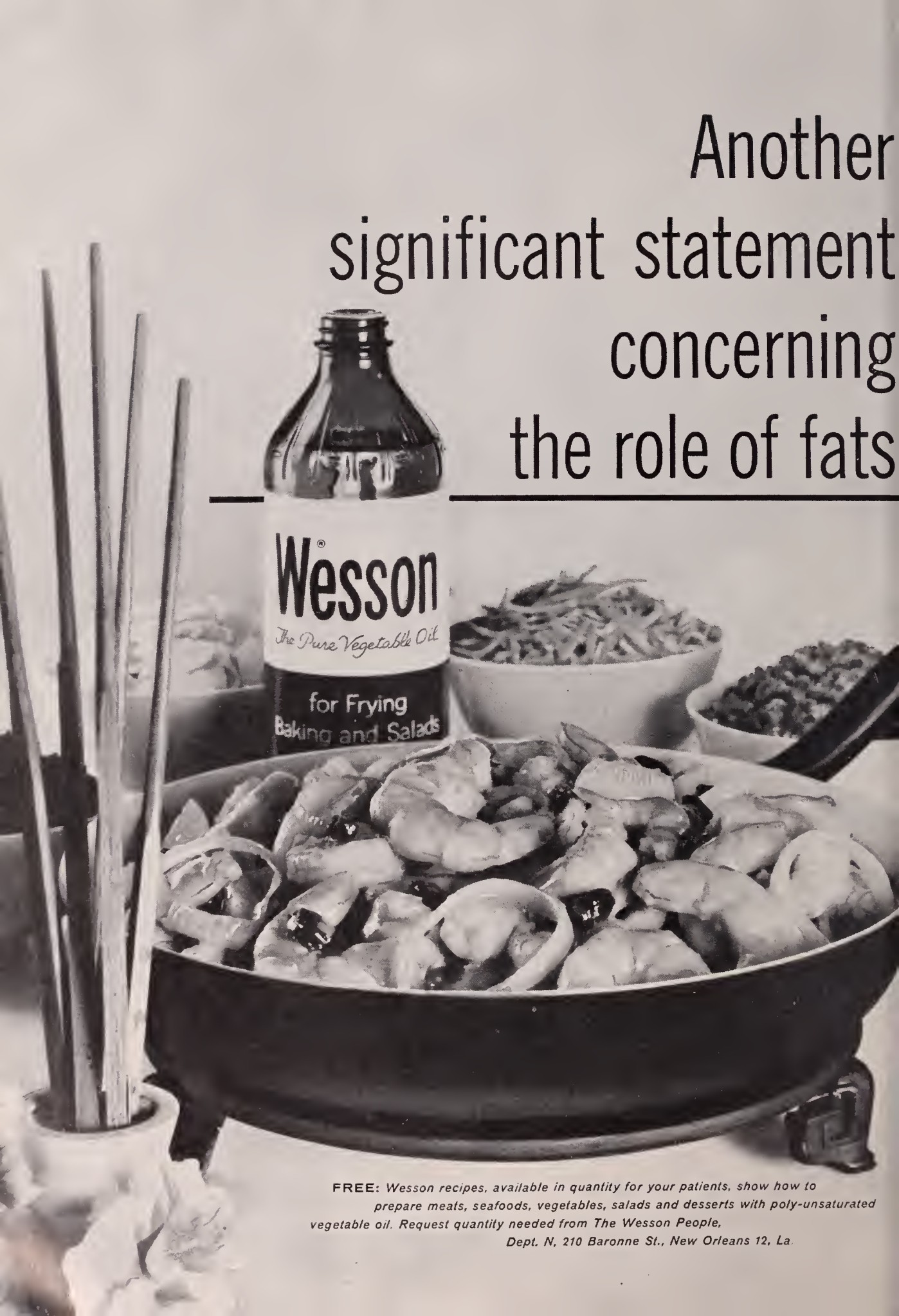
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IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better...and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

SUPPLIED: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.

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Dietary Linoleic Acid and Linoleate—*Effects in Diabetic and Nondiabetic Subjects with and without Vascular Disease*

A paper by Laurance W. Kinsell, M.D., et al., excerpted from Diabetes—The Journal of the American Diabetes Association, May-June 1959

"*Linoleic acid as the major 'hypocholesterolemic agent' in vegetable fats.* The question has been raised as to the mechanism of lowering of the plasma lipids by a variety of vegetable fats. Among the entities present in or absent from vegetable fat which have been considered are: (a) the absence of cholesterol; (b) the presence of certain vegetable sterols; (c) the presence of certain vegetable phospholipids; (d) the nature of one or more of the fatty acids present; (e) the presence of trace materials.

n the diet

The absence of cholesterol has been excluded as a major factor.[5a] Phospholipids, if they contain a sufficient quantity of unsaturated fatty acids may produce a striking reduction. In our experience thus far saturated phospholipids fail to produce such an effect.[7]

Beveridge and his associates believe that vegetable sterols, particularly beta-sitosterol, are responsible to a significant degree for the cholesterol-lowering effect.[8] In our experience the vegetable sterols have a relatively weak and unpredictable effect of this sort.

Since the fatty acids of animal fats are predominantly saturated, and the fatty acids of most vegetable fats are predominantly polyunsaturated, with linoleic acid as the major component of the vegetable fats which lower cholesterol and other lipids, the question arises whether linoleic acid per se is capable of lowering plasma lipids. As reported previously[7] this is indeed the case. In a recent study in a young male with peripheral atherosclerosis in association with elevation of plasma cholesterol and of total lipids, ethyl linoleate produced a greater fall in the plasma lipid levels than had moderate amounts of natural sources of unsaturated fat. Linoleic acid, therefore, appears to be the most important single lipid-lowering component of vegetable fat.

* * *

Significantly higher levels of cholesterol were observed during oleate administration than during administration of equal amounts of linoleate. The relatively low cholesterol values during the second oleate period may have been related to linoleate stored in fat depots. The fatty acid composition of the cholesterol esters reflected the fat which was fed, i.e., the mono-enoic† acid content averaged more than 40 per cent during oleate feeding and less than 20 per cent during linoleate ingestion. Essentially, a mirror image of this resulted during linoleate feeding, at which time di-enoic acid predominated.

* * *

The data presented in this paper appear to establish that linoleic acid administered either as purified ethyl ester or as naturally occurring fat, in sufficient quantity, in properly constructed diets, will reduce plasma lipids to normal levels. The amount of linoleic acid required appears to bear a direct relationship to the amount of saturated fat included in the diet. Linoleic acid requirement may also bear a significant relationship to the amount of atherosclerosis present.

The transition from evaluation of the effect of dietary entities upon plasma lipids, to the evaluation of the effect of such materials upon vascular disease is difficult. However, such evaluation is not impossible. The requisites are adequate measuring sticks and well-controlled studies of sufficient duration. The duration of observation of effects of unsaturated fat in diabetic and nondiabetic patients with vascular disease is in no instance more than five years, and in the majority of instances, less than three. Our present impression is that improvement has occurred in some patients with atherosclerosis and with diabetic retinal and renal disease which was more than we would have anticipated in terms of the natural course of the disease. However, since it is well known that major fluctuations in these diseases can occur in individuals receiving no treatment, we believe it is appropriate at this time to say that no untoward effects appear to result when one prescribes diets containing large amounts of unsaturated fat for patients with such diseases, and it is not impossible that beneficial effects may be associated with such diets."

* * *

5a Kinsell, L.W., Partridge, J. W., Boling, L., Margen, S., and Michaels, G.D.: Dietary modification of serum cholesterol and phospholipid levels. J. Clin. Endocrinol and Met. 12:909, 1952.

7 Kinsell, L. W., Friskey, R., Splitter, S., Michaels, G. D.: Essential fatty acids, lipid metabolism, and atherosclerosis. Lancet 1:334, 1958.

8 Beveridge, J.M., Connell, W.F., Firstbrook, J. B., Mayer, G.A., and Wolfe, M.J.: Effects of certain vegetable and animal fats on plasma lipids of humans. J. Nutrition 56:311, 1955.

† Mono-enoic (mono-unsaturated) acid is presumably synonymous under these conditions with oleic acid and di-enoic (di-unsaturated) acid with linoleic acid

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Phytosterol (predominantly beta sitosterol)	0.3-0.5%
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A combination of Atabrine® hydrochloride 25 mg., Aralen® phosphate 65 mg. and Plaquenil® sulfate 50 mg.

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Treatment of lupus erythematosus (chronic discoid type) and polymorphic light eruptions (light-sensitivity eruptions, solar urticaria or dermatitis).

HOW IT ACTS:

Each of the three components produces beneficial response in lupus erythematosus and light-sensitivity eruptions. Since the dose of each of the Triquin components is very low, overall toxicity is reduced and clinical tolerance improved. Furthermore, the three components appear to act synergistically.

HOW SUPPLIED:

Triquin tablets in bottles of 100, sold on prescription only.

Write for TRIQUIN booklet.



DOSAGE:

Lupus. Average initial adult dose, 1 or 2 tablets after meals and at bedtime. Dosage should be reduced gradually at two week intervals to 1 or 2 daily.

Light-Sensitivity Eruptions. Average initial adult dose, 1 tablet after breakfast and lunch. May be reduced after several weeks to maintenance dosage of 1 tablet daily.

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Palatability is the key to this special diet. And these dishes have real appetite appeal.

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On green salads, cottage cheese thinned with lemon juice makes an unusually satisfying dressing. For a delicious diet dessert, a slice of angel cake goes nicely under fruits—skim milk powder makes the "whipped cream."



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Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis in Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

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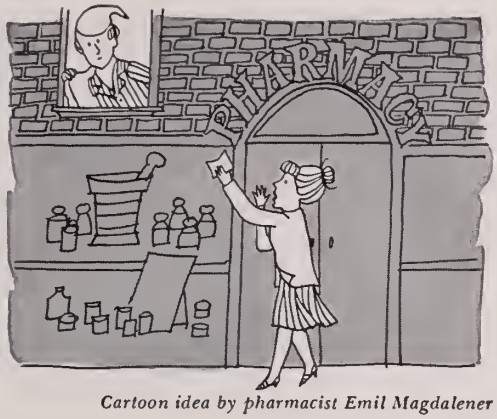
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Composition: Each spaced release tablet contains—Reserpine 0.225 mg., Rescinnamine 0.075 mg., Veratrum Viride Ester Alkaloids equivalent to 1.5 mg. of house standard.

Dosage: 1 tablet twice a day, after the morning and evening meal. Initially, an occasional patient may show some sensitivity to this regimen; if so, reduce the dose to one tablet per day for several days and then resume two tablets daily.

How Supplied: Bottles of 100 pink tablets.

References: 1. Asbell, N. and Tanyol, H.: The Use in Older Patients of an Antihypertensive Compound Incorporating Rauwolfia and Veratrum in Spaced-Release Form, Proceedings of the Symposium on Hypertension of the Richmond Academy of General Practice, Richmond, Virginia, October 20, 1959, p. 15. 2. Raines, D.S.: Clinical Experience with Spaced-Release Combination of Rauwolfia and Veratrum Alkaloids, ibid., p. 35.

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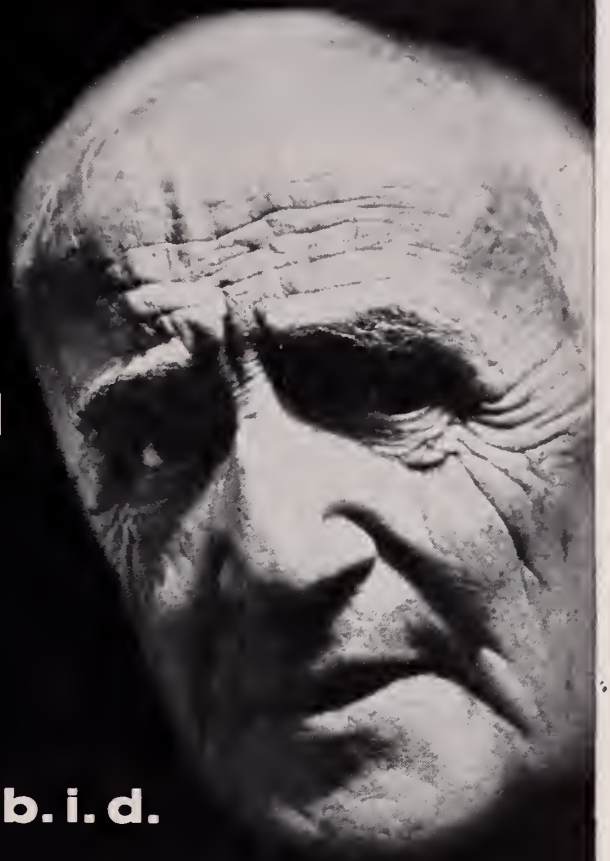
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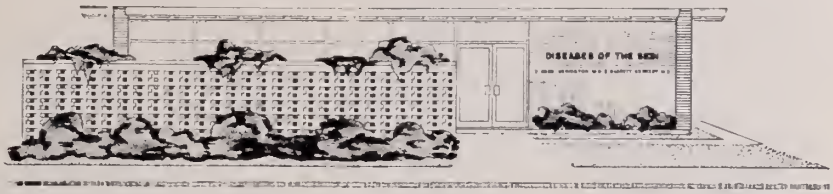
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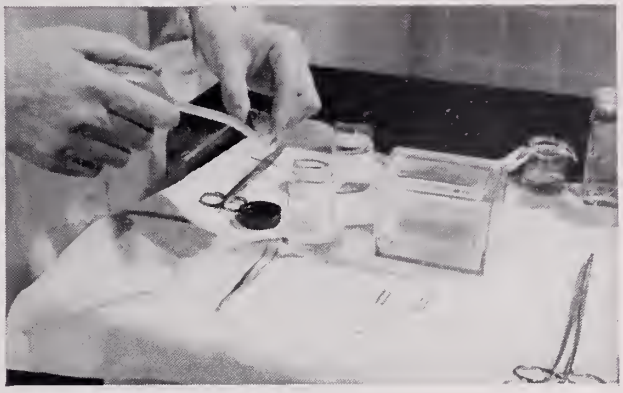
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References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Friend, D. H.; Clin. Pharm. & Therap. 1:5 (Mar.-Apr.) 1960. 3. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

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1. Ganz, S. E.: *J. Indiana*
52:1134, July, 1959. 2. Kearney
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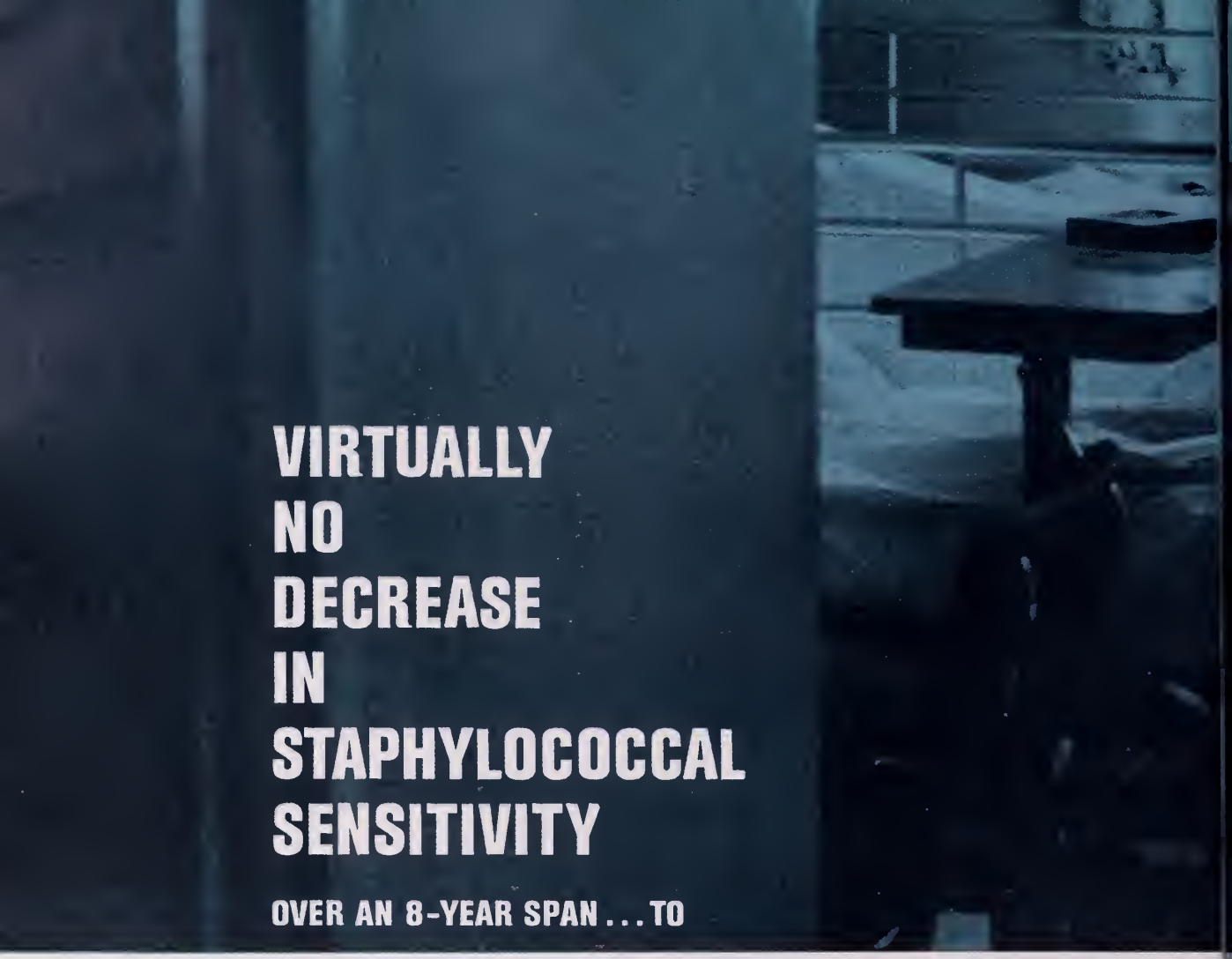
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References: (1) Welch, H., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 1. (2) Rebhan, A. W., & Edwards, H. E.: *Canad. M. A. J.* **82**:513, 1960. (3) Fisher, M. W.: *Arch. Int. Med.* **105**:413, 1960. (4) Finland, M., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 187. (5) Bercovitz, Z. T.: *Geriatrics* **15**:164, 1960. (6) Glas, W. W., & Britt, E. M.: Management of Hospital Injections, in Symposium on Antibacterial Therapy, Michigan & Wayne County Acad. Gen. Pract., Detroit, September 12, 1959, p. 7. (7) Staphylococcal Infections in Pediatrics, Scientific Exhibit, Commission on Professional and Hospital Activities, 108th Ann. Meet., A. M. A., Atlantic City, June 8-12, 1959. (8) Robinson, H. M., Jr.; Robinson, R. C. V., & Raskin, J.: *Postgrad. Med.* **27**:522, 1960.



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1. Rein, C. R., and Fleischmajer, R.: The efficacy of tetracycline phosphate complex (TETREX) in dermatological therapy. Antibiotic Med. & Clin. Ther. 4:422 (July) 1957.

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1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: *Antibiotic Med. & Clin. Ther.* 3:378 (Nov.) 1956. 2. Boger, W. P.: In: *Antibiotics Annual* 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: *Antibiotic Med. & Clin. Ther.* 5:604 (Oct.) 1958. 4. Anderson, P. C., and Wissinger, H. A.: *U. S. Armed Forces M. J.* 10:1051 (Sept.) 1959.

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Kestler, O.: Conservative Management of "Low Back Syndrome", J.A.M.A. 172: 2039 (April 30) 1960.

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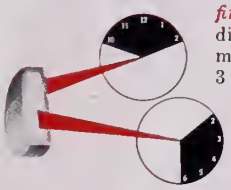
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References: 1. Steigmann, F., **et al.:** Am. J. Gastroenterol. **33**:109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. **6**:423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

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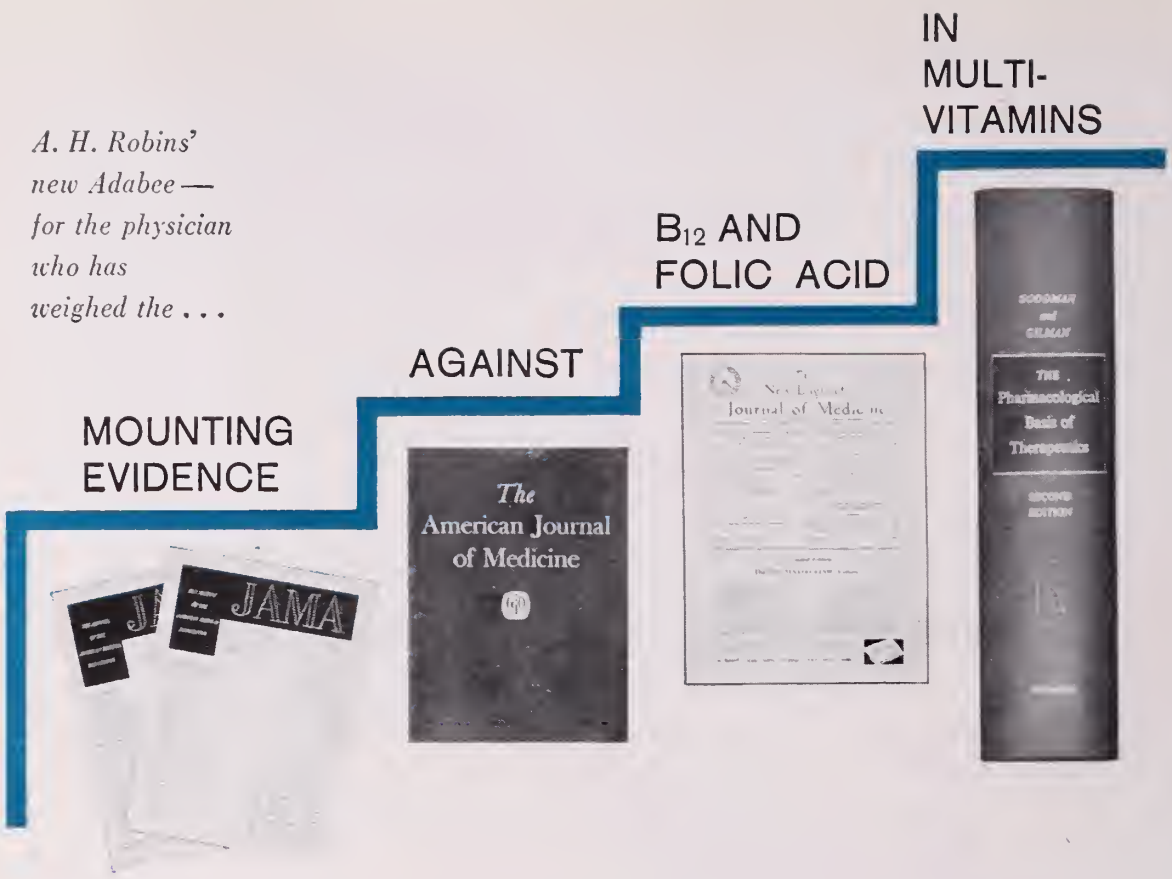
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references: 1. Wintrobe, M. M., *Clinical Hematology*, 3rd ed., Phila., Lea & Febiger, 1952, p. 398. 2. Goodman, L. S. and Gilman, A., *The Pharmacological Basis of Therapeutics*, 2nd. ed., New York, Macmillan, 1955, p. 1709. 3. New Eng. J.M., Vol. 259, No. 25, Dec. 18, 1958, p. 1231. 4. Frohlich, E. D., New Eng. J.M., 259:1221, 1958. 5. J.A.M.A., 169:41, 1959. 6. J.A.M.A., 173:240, 1960. 7. Goldsmith, G. A., American J. of M., 25:680, 1958. 8. Darby, W. J., American J. of M., 25:726, 1958.

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, 7:No. 2 (February), 1960.

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The Journal

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Vol. 112, No. 9

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1430 Tulane Avenue, New Orleans 12, La.

Rudolph Matas (1860-1957)
A Tribute

• "The heights by great men reached and kept
Were not attained by sudden flight,
But they, while their companions slept,
Were toiling upward in the night." (Longfellow)

ISIDORE COHN, B. Sc. M.D. F.A.C.S.
New Orleans

LEGEND, tradition and recorded events are the sign posts which guide us in our efforts to reach the summit along the paths charted by the heroes of thought and action.

"We reap, that which others have sown." (Fothergill.) All teachers realize that the impression which they make on their pupils will be reflected by the future character of the disciples. The immortality of the teacher is based on how much of his own worth, attitudes and character are adopted by the pupil.

In the letter of invitation to present this lecture Professor Trueta suggested that I talk on the life of Rudolph Matas. I welcomed the opportunity because of my association with Dr. Matas, as pupil, associate, and confidential friend for more than fifty years. His life's span was ninety-seven years. His accomplishments and his activities covered a wide range of human endeavor. To telescope so much into a short space of time is difficult.

I am at once reminded of the advice of Gracian — "Make a good exit. Keep in mind the curtain. Pay greater heed to a happy exit than to the applauded entrance." The request for a talk on the life of Rudolph Matas implies that you want to know what manner of man he was and how he accomplished what he did. In order to satisfy this request it will be necessary to observe him in his library, in the class room, the operating theater, the wards of the hospitals, at meetings with his colleagues, his contacts with editors and publishers and his association with lay people upon whom he exerted so much influence for the improvement of medical education.

Early Life and Education

One hundred years ago Rudolph Matas was born on a plantation in Louisiana, the son of native born Catalonians. The parents migrated to the United States after their marriage. During the American Civil War the family went to France, where the father studied ophthalmology. The family moved on to Barcelona. An unfortunate railroad speculation all but pauperized the elder Matas, after which

* Delivered by invitation at Oxford University, Oxford, England, June 30, 1960.

he returned to the United States hoping to recoup his fortune.

During the stay in France and Spain Rudolph learned some French and Spanish. His introduction to English was obtained in the schools at Brownsville, Texas, and later was continued in New Orleans. The last two years of academic education were obtained in Matamoros, Mexico, at the "College of St. John." After graduating from this high school, at the age of seventeen, he matriculated at the Medical College of Louisiana (1877).

In spite of the peripatetic nature and the limited scope of his academic training, because of his native talents, insatiable desire for knowledge and indefatigable energy, he became one of the most widely read individuals in diverse fields.

Yellow Fever

After entering the medical school in the autumn of 1877 he passed a competitive examination the following spring for the post of resident student at Charity Hospital in New Orleans. There he got his first "baptism" of fire during a yellow fever epidemic which claimed the lives of more than 5000. The effect of this tragic community experience prompted the Federal Government to appoint a commission to study yellow fever in Havana, Cuba. Dr. Stanford E. Chaille was selected chairman and he in turn selected his pupil Rudolph Matas to be laboratory technician and interpreter for the commission. During the stay in Havana he came under the influence of the Cuban scientist Carlos Finlay who postulated the theory that the mosquito was the vector for yellow fever. Young Rudolph was intrigued by the views of Finlay. He translated Finlay's first paper in 1881, and continued to advocate Finlay's priority to the claim of "Father of the Mosquito Theory", which was finally proven by the Walter Reed commission in 1900. The value to the world and particularly to Louisiana of the knowledge of the method of transmission of yellow fever cannot be estimated. We do know that it was the means of banishing the dreaded recurring plague from our shores.

In 1867 Rudolph had yellow fever. This gave him the feeling that he was immune. On three subsequent occasions he had what was diagnosed as yellow fever. Enthusiasm for truth, and interest in scientific development caused him to have his blood examined in 1943 (age 83). The report indicated that his blood contained immune bodies — a period of 76 years since his known attack of the disease. *Age had not dimmed his curiosity.* In 1880, at the age of twenty, he was graduated with the degree of Doctor of Medicine. His graduation was made memorable because Dr. Chaille singled him out for work done during his stay in Havana and because one of the guest speakers at the exercises was the great Samuel D. Gross. At the age of 91 Dr. Matas recalled the impressions which Gross had made upon him. Not many of us can recall who the orator at our graduation was or what he said.

Interest in Anatomy

During the period following graduation Rudolph Matas spent a great amount of time in Charity and in the dissecting rooms. In 1885, he was appointed Demonstrator of Anatomy at Tulane. He held this post until his election to the Professorship of Surgery at his Alma Mater in 1894.

Beside conducting classes in gross anatomy he conducted investigations which led him to question certain generally accepted teachings. One such problem was the question of whether the appendix was an intra-peritoneal organ. In a treatise on Iliac Phlegmons (1886) he concluded that the appendix was in reality an intra-peritoneal organ. In his first report he attributed the idea to Mr. Treves. One year later he corrected his error. "At the time I was unaware of the just claim of priority which the German anatomists possessed. At that time I exclusively associated Mr. Treve's name with the fact that he taught and that I had confirmed, believing him to be the sole author to

whom credit was due." Search of the literature revealed a paper written by Luschka (1861) which credited Bardeleben with the statement "the cecum is without exception always surrounded by peritoneum." *

This meticulous attention to historic details became a characteristic of Dr. Matas' writing which made his manuscripts the bane of the existence of editors and publishers. When final proofs were submitted to him he often insisted that recently published data should be included. Time limits set by publishers were never met by him. As his fame spread it was considered necessary that chapters on vascular surgery should be written by him. The volume of material which he would submit embarrassed editors and caused him many heartaches. He would not agree to publication unless it met his own standards. He refused to bow to expediency. In a letter to William S. Halsted he expressed his sentiments.

"Unfortunately the publishers found that I had already exceeded the limits of the space assigned to me and the whole chapter was trimmed off. What a fearful waste of time and energy these composite systems and text-books involve. It is not the midnight oil, but the wick of one's own life that is consumed and wasted in these procrustean efforts to fit the measure of editors and publishers. All to no purpose except to flicker for a speeding moment and then to follow in the trail of *long funeral trains of dead and forgotten text books that lumber* the path of medical history."

These sentiments did not prevent him from preparing manuscripts, the deadlines for which he did not meet and others had to carry on. One of the projects which he undertook was the history of medicine in Louisiana. After accumulating material for nearly thirty years he provided a trust fund to complete the project. During the period 1885-1894 his diligence in observation and investigation led him to bold approaches to such varied subjects as intestinal anastamosis with cat-gut rings, thyroidectomy and his masterpiece in vascular surgery, the treatment of aneurism by intrasacular suture. His interest in anatomy caused him to be a skilled surgical anatomist. As we watched him in later years we marvelled at his direct approach to diseased anatomical structures. He knew where structures were and he exposed them with the skill and accuracy of a skilled navigator. In 1930 a professor of anatomy appealed to him to use his influence to prevent the inroads on time devoted to anatomy in the medical curriculum. He replied:

"I am in sympathy with your protest against the curtailment of the course in anatomy. Teachers who are not clinicians have no opportunity to appreciate the value of anatomical knowledge. They are never called upon to repair the machine when it is damaged. They seem to forget that anatomy is the foundation of medicine."

Work on Aneurisms

Less than eight years after graduation he performed the operation which has caused him to be called the "Father of Modern Vascular Surgery," and the "Modern Antyllus." The latter title was given him by Sir William Osler.

In April 1888, he was confronted with an aneurism of the brachial artery, the result of a gunshot wound which did not respond to the Hunterian ligature. When this failed he added a distal ligature; this also failed. He then was prepared to extirpate the sac. At operation this was found not to be feasible because of the intimate relation of the sac to the major nerves of the arm. At this point he opened the sac, after the plan of Antyllus, and noted openings in the bottom of the sac. His resourceful mind, and his knowledge of collateral circulation, prompted him to try a suture in preference to the time honored packing. After closing the openings with silk he had the tourniquet

* In his paper on Iliac Phlegmon (1886) Dr. Matas expressed the following opinion about operation on the appendix: "There can be no doubt that in many instances in which the appendix is seriously diseased that the safest plan would be to remove it just as the gynecologist would not hesitate to remove an ovary." Even though he made that statement, years later I asked him if he remembered the date of his first appendectomy, he answered:—"I don't know of anyone (1886) who was reckless enough to remove an appendix." "The opening of the abdomen at that time was a bold step."

removed and to his astonishment there was no bleeding. Thus was born a new era in surgery of blood vessels.*

Traditional respect for the Hunterian procedure and the force of professional opinion deterred him from departing from the conventional ligature method. After several unhappy experiences when gangrene followed ligations he finally summoned courage to announce the method which has made his name synonymous with the so-called modern method. I say modern method because we have a habit of speaking of new procedures as modern, without realizing that what is new today may be obsolete tomorrow. Fortunately, this has not been the case with the fundamental work of Matas. Even though the graft has to a large extent replaced intrasacular sutures, it must not be overlooked that it is the use of the suture which is fundamental and the basis on which grafts are possible.

It is interesting to note that he visualized the use of grafts as early as 1903.

"We should imitate the simple artisan, such as the plumber, who when he finds a leaking pipe he replaces it with a new section."

It should not be assumed that he rested on his laurels, or that the new principle was immediately adopted.† Dr. Matas persisted throughout his long career in efforts to make surgery of the vascular system safer by making studies on collateral circulation and the use of aluminum bands as a substitute for a ligature on the carotids and other vessels to avoid the disastrous effects of a permanent ligature on the carotids.

By way of digression, I should like to remind you that many surgeons utilize techniques without realizing to whom they are indebted for the innovation. Many of us do not pay homage to the masters who have pioneered so that we may accomplish the wonders of present day surgical procedures.

Professorship of Surgery 1894-1927

The chair of Surgery became vacant in 1894. The faculty and the Board of Administrators were inclined to offer the position to a surgeon from Baltimore. There arose a spontaneous demand for the selection of Rudolph Matas. Newspaper editorials insistently expressed public sentiment. Citation of one will be sufficient to give an idea of public indignation:

"Louisiana has been the birthplace of many who have been crowned with the laurels of success and distinguished honors, but it appears to be a unanimous verdict that no greater scientific scholar, lucid writer and brilliant lecturer has ever been born in our great state than Rudolph Matas."

Not only did the lay public acclaim him, but strange as it may seem the medical profession united in their demand for the election of Matas. One of his colleagues wrote:

"I hope that the faculty will see that the city's professional opinion cannot with impunity be overlooked. It will be an advertisement to the world of the incapacity of New Orleans men. I hope that the faculty will think better of it."

The demand for Matas was acceded to.

The Dean, who had opposed the selection of Matas, years later wrote to Dr. Matas:

"In the extent and value of your services to the Medical Department you have never been equaled. It is ardently hoped that in the future neither the Board nor the Medical Department will ever forget or ignore the consideration due you for your invaluable services."

This accolade from Dean Chaille was probably Dr. Matas' most prized possession.

The years following his election found him busily engaged in a variety of investigations. Local anesthesia attracted his attention early because of the many disquieting sequelae of chloroform anesthesia. He was the first American surgeon to successfully operate under spinal analgesia. (1899). Early experiences with the use of the Fell-O'Dwyer intubation apparatus in cases of diphtheria led him to modify the apparatus in order to main-

* An English doctor, Mr. Lambert, suggested the use of a suture to Mr. Hallowell in 1759, who carried out the procedure, but without success. His was the only attempt prior to the Matas operation.

† Mr. Charles Ballance and Dr. Matas came to grips at the International Congress of Medicine in London in 1913.

tain aeration of the lungs by positive pressure. This pioneer work was reported in 1898.

"In man acute traumatic pneumothorax with pulmonary collapse and its attendant shock and asphyxia is the rock that obstructs the otherwise open channel of the thorax. Until the risk of seriously interfering with respiratory function is reduced, surgery of the lung will not be safe. The procedure which promises the most benefit in preventing pulmonary collapse in operations on the chest is the artificial inflation of the lungs and the rhythmical maintenance of artificial respiration by a tube in the glottis directly connected with a bellows."

His positive pressure, based on the Fell-O'Dwyer's principle, made use of a footbellows and a tube to administer ether. The value of positive pressure was demonstrated in a series of experiments designed to diminish the caliber of the thoracic aorta. The operation was associated with a minimal mortality in experimental animals.

Implementation of the idea of preventing pulmonary collapse in open chest surgery may well be considered one of the lasting contributions of Rudolph Matas.

Just as he was alert to the dangers of general anesthesia and operations on the thorax, he was constantly striving to devise ways and means to diminish postoperative complications. Saline infusions had been used for years, but it remained for him to introduce the "intravenous drip." *

Another innovation which Dr. Matas introduced was the use of the indwelling catheter in the stomach and duodenum for continuous siphon decompression of the stomach and small intestines. More elaborate apparatus has since been made use of and the *procedure is credited to another surgeon.*

Not long after his inauguration as professor complaints were leveled against him. During the first college session the Dean wrote him:

"My friendship for you justifies me in expressing to you with perfect freedom fears about you and tendering advice. I call your attention to criticisms from some of your friends. 'Matas will never be able to be on hand when the bell strikes and to finish his lecture when the bell strikes again.' Should you deserve such criticism I would certainly make your professorship a hell for you, so far as is in my power. I regard lack of punctuality at assigned lectures as downright dishonesty. If you tresspass over your hour you are trespassing upon the time of your colleagues and guilty of the presumption that your teaching is more important to the student than that of your colleagues." The Dean further admonished him to talk "to the most distant man in the room, don't talk over the heads of your students and do not burden them with too many citations of authorities."

These criticisms leveled at Dr. Matas in 1894 were in part justified during his entire teaching career. Dr. Matas was never conscious of the passing of time. His watch was an ornament and not an indicator of the passing of time.

Punctuality was never a characteristic of my Chief. At times he would sit in his carriage in front of the College absorbed in a recent publication while students waited in the classroom for him. Lectures were all didactic, and his students had to copy from blackboards the lectures as given. There were always references which the students had to read in order to prepare for the monthly written tests. Years later I had an opportunity to correct student papers for him. This experience is one that I can never forget. On one occasion he phoned to say that he was sending about one hundred sets of quiz papers for me to grade. At the time he advised me that there was no hurry. In spite of this warning I worked for two days and nights. Late on Saturday he called to say that the grades had to be in the following Monday. He added "Finish what you can and come to the house and we can go over the remaining papers together." We worked steadily until midnight, when Mrs. Matas brought refreshments, after which we continued until 2 a.m. It was in such intimate contacts

* The first continuous blood transfusion using the Matas intravenous drip principle was introduced by Marriott and Kekwick. See report of paper by Marriott & Kekwick, B.M.A. Journal 1936. Letters of Dr. Marriott to Dr. Matas August 3d, 1935 testify to Dr. Marriott's knowledge of the Matas method of giving saline infusions.

that I gained an appreciation of his interest in the "lame duck". He would venture "The poor boy must have been tired he knew more than he put on paper—we can raise his grade enough to give him a passing grade." Many an individual will never know that the kindness of the professor enabled him to obtain his diploma.

Operating Room and Hospital Wards

It was in the operating room and the wards of the hospitals that we really saw him at his best. It has been pointed out that punctuality was not a characteristic of his. His operating schedule was dependent on the time of his arrival and not an appointed time. In the private hospital where he did the majority of his work, Touro Infirmary, two operating rooms were set aside for his use. When he arrived the "drama" would begin. His assistants were briefed about procedures and each step was painstakingly explained. His anatomic approach was direct, his anatomic knowledge was precise. He belonged to the "tie and cut" group and not to the "cut and tie" variety. His efforts were to save every drop of blood and he believed that speed was not the prime factor, but that safety was the urgent duty of the surgeon. He would often remind us that the operating room was not the place to use the Marquis of Queensberry rules. The lessons gained by assisting the master had a lasting effect on our activities when we were confronted with the awesome responsibility of the human life placed in our hands so far as human aid was concerned.

Before leaving the hospital, after a day in the operating room, he would see each patient, and when he left the hospital the parting instruction to his intern was to phone him within the hour to give a report on the condition of the patients. This hourly report went on into the wee hours of the morning, at which time he would inquire as to the time and then advise the intern "You better get some sleep, as we have a hard day tomorrow."

In the wards of Touro Infirmary we had an opportunity to observe his actions and to be stimulated to prepare ourselves for the obligations implicit in a surgeon's career. A desperately ill patient demanded his attention to the exclusion of everything else. He would sit by the bedside and issue orders in rapid succession.

He wrote:

"The surgeon is the commander-in-chief who is responsible for safeguarding the life that is entrusted to his care. All of the others, like the officers and crew of a ship, are merely responsible to him."

In ward rounds we would witness a drama which represented every human emotion, from the peaks of joy to the caverns of despair. Through the whole "performance" he seemed capable of contributing an appropriate sentiment. It was to those burdened with sorrow he seemed to give the greatest comfort. No minister of religion ever gave greater consolation than he. Visiting convalescent patients added another unforgettable experience. His patients came from every walk of life, rich and poor, cultured and illiterate. The languages of his clientele had a wide range—French, Spanish, Italian, the patois of the Bayous and English. Going from room to room was like crossing international boundaries. The language shift was made with the ease of changing scenery. His linguistic ability made him the marvel, not only of his immediate associates, but at international gatherings he amazed assembled members by this facility.*

On ward rounds he would amaze his associates and patients by discussing modern novels with the young, art, music,

* At the Congress of the International Surgical Society in London (1947) he translated an address from Spanish to English—without a note, or without ever having seen the paper (Bastos-Ansart's address which had been read in Spanish.) Two years later in New Orleans he addressed the Congress in English, French, Spanish and Italian. Dr. Matas commented on language difficulties: "When one attends an interrational congress where one only knows his own vernacular he feels himself isolated, linguistically crippled and helpless in the midst of the babel-like confusion that surrounds him."

literature, science, history or law with patients.

Dr. Matas' Reading Habits; Attitude Toward Medical Practice

Dr. Matas was considered one of the best informed men in medicine. Many specialists in other fields found themselves confounded by his accurate knowledge of their own specialty.

A visit with him in his library may give some idea of the man and his ways. The room, (about 35 by 20 feet), was lined with book shelves, from floor to ceiling. It contained a long table, which was strewn with papers, journals, unanswered letters, portfolios and necessary writing materials. There were two chairs, his own swivel chair and a plain cane-bottom chair on the opposite side of the table for his faithful secretary. He wore a short sleeved barber type coat. All of his writing was done in long hand, in a script so fine that only one accustomed to it could decipher it. In such an interview it was natural to inquire about his reading habits and his opinions about the profession which he had adorned for so many years. One of his first comments during such an interview was:

"I feel sorry for those unfortunates who hate their own company; who can't bear to be alone and would rather die of ennui and melancholy if left to their own resources. I have always learned more through my eyes than through my ears and the only dread that I have is that this one source of greatest happiness may suffer impairment in my closing years."

This sentiment was based on the fact that he lost vision in one eye in 1908. In 1915, he wrote:

"I have never done more minute and exacting work than in the seven years that have elapsed since the accident that deprived me of my right and best eye. In consequence of my perfect adaptation to the monocular state, I find myself tramping along life's journey with a sure step and peggirg along as though nothing had happened. The fact that I have been able to keep up with the profession is sufficient explanation of my cheerful acceptance of a situation, which perforce has become normal to me."

In 1952, he faced operation for cataract extraction with courage.

"If I am operated and lose this eye there will be nothing but darkness." He was also able to say:

"I view the future with the calm contemplation of an astronomer gazing at the stars, wondering at their eternal light with no fear of their extinction or the darkness of a starless night."

In the course of the interview he was asked about the ten books from general literature which he had enjoyed most. His answer was:

"You might as well ask a confirmed gourmet what ten repasts have left the most pleasurable impression on his palate. It is no easy matter for a professional man whose mind has been nourished through a life time with the mental food extracted from books to designate what ten books he has enjoyed the most. Books and their equivalents (periodicals) are as necessary to his well being as bread and meat to his physical fitness or efficiency."

His reading covered the range from the Bible, Dante, Shakespeare, Hugo, Tennyson, Mark Twain to detective stories. In medicine he read everything from history, biography, current journals (in several languages) to medical brochures published by pharmaceutical houses.

During the interview certain questions were put to him:

Q. Doctor, would you define surgery for me?

A. "Surgery, throughout the ages has been the only art which has given the human hand, not only the supreme privilege of penetrating, exploring and working in the flesh of man, but of creating and restoring some of its lost parts. We cannot conceive of a handless surgeon, much less can we imagine a brainless one. If surgery were a mere craft it would still be grovelling in the barber shop. It is only since Lister came as the apostle and a new Evangel which was to regenerate surgery and purify the surgeon's hands so that they might enter the holiest sanctuaries of the body without fear of desecration."

Q. Would you define what a surgeon is?

A. "A surgeon must be not only a physician, but something more. The surgeon can never detach himself from the broad pedestal of medicine, or

forget that he is entrusted with the care of the patient and not just a part of him. He must be sure that he has the knowledge which he can acquire only by prolonged study. Without knowledge of anatomy, physiology and pathology he could no more be trusted to operate than an engineer to run a twentieth century locomotive which he had never seen. The surgeon should possess a wisdom of judgment, resourcefulness, courage and a high sense of duty. A surgeon's mind should be sensitive to a moral code."

Q. Having touched on Ethics, would you elaborate a bit on some of the practices which have cast disrepute on the profession, particularly, fee-splitting?

A. Unfortunately, in every profession there is a due proportion of conscienceless defectives, who may be intelligent, but soulless. These are the men who only dream of their sordid ambitions, either for lucre or to satisfy their craving for notoriety as great operators, whose sleep is never disturbed by reproachful visions of funeral processions. These individuals are moral monstrosities only fit to be exhibited in pathological museums. They are mentioned only to be condemned."

In concluding the interview, he said:

"I would remind the young surgeon that his character is what a man is and not what reputation considers him. It is not learning but worth. To any thoughtful observer the evidence must be convincing that while stupendous progress has been made, the teachings of the principles of honest and righteous conduct have suffered and have failed to keep pace with the intellectual and scientific age."

It is small wonder that his students looked upon him with respect, awe and reverence. We saw in him a teacher who was intent on transmitting to them from his fund of information, a man whose ideals were above reproach, and whose actions were not prompted by a desire to gain notoriety. Under his guidance we learned to appreciate that the diploma was but a license to study medicine, that constant study of current literature was essential, that a sympathetic attitude should always be maintained toward the patient, that humility is paramount and that self adulation is not a mark of greatness. We saw in him a man who was consecrated to ideals; one who was never too busy to care for the poor.

It is in the fields of the intangibles that he will live. His tangible accomplishments are subject to change. The innovations of today become the commonplace tomorrow. That Dr. Matas accomplished much for the benefit of the human race has been recorded.

He possessed Hippocratic powers of observation, the boldness of McDowell, the courage of Pasteur, the anatomic knowledge of Da Vinci and Hunter and the cultural development of Weir Mitchell.

His example will remain a tradition and a spiritual legacy to immortalize his name.

The Effects of Alcohol In Traumatic Deaths

• Alcohol is now one of the greatest hazards to life and health. It is responsible for many deaths, not only of those who imbibe it in large proportions, but of those who take it within the social level of drinking.

NICHOLAS J. CHETTA, M.D.
IGNACIO MEDINA, JR., M.D.
RAFAEL C. SANCHEZ, M.D.
ANGELA P. COMSTOCK
DOROTHY B. ANDREWS
New Orleans

THE clinical effects of alcohol on the mind and body of man have long been recognized by both lay and professional people. Throughout the annals of history records attest the disaster to man and nations from the excessive use of alcohol. This was as true of the cultured Greeks and the powerful Romans as it was of barbarians and uncivilized peoples.

In our present day, alcohol has become one of the greatest hazards to life and health. It is the most common poison. During the years 1953 to 1960, of all the cases tested for alcohol at the Orleans Parish Coroner's Office, one-third were positive. Alcohol in many instances accentuates other intoxicants and often brings about serious and even fatal injury. Many types of criminal acts, homicide, suicide, rape, burglary, robbery, etc., are committed or sustained while under the influence of alcoholic intoxicants.

In the article "The Traumatic Pathology of Traffic Accidents" which appeared in the July, 1959, issue of the Journal of Forensic Sciences, we discussed the importance of human factors in traffic accidents and the significant effects of alcohol.

Traffic Fatalities

No one who investigates accidental deaths can fail to be impressed by the importance of alcohol as a contributory cause of traffic accidents, but alcohol plays an additional role in traffic fatalities. In reports dealing with traffic accidents it is seldom mentioned that alcoholic intoxication greatly complicates the emergency management of an injured person and that even if given the best of treatment his ability to survive extensive trauma is impaired. An obnoxious, hostile, drunken patient is difficult to examine or control at the accident scene. His perception of pain is impaired and he can give no clear account of the symptoms he does experience. It may be impossible to perform an adequate neurological examination or to determine whether impairments that are found are the result of intoxication or of trauma. Aspiration of vomitus may occur with obstruction of the airway and increased danger of subsequent pneumonitis. The central depression associated with high blood levels of alcohol slows respiration, increases the danger of cerebral and pulmonary edema and complicates the performance of many diagnostic and therapeutic procedures.

Alcoholism may contribute to a traffic fatality just as directly by its effect on the victim's recovery after he is injured as by impairing his judgment and coordination before the accident.

In our series, blood alcohol levels were determined on all traffic victims over 15 years of age who died within twenty-four

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, in Baton Rouge.

hours after the accident. The results provided definite evidence of recent drinking in 55 per cent of fatally injured pedestrians, 60 per cent of automobile drivers and 36 per cent of passengers tested. These findings are similar to those of Freimuth and Gerber.[5, 6]

Let us review several cases which will exemplify the significance of alcohol in traumatic deaths.

This is the case of a young white female who lived in the Lakeview area and who was crossing a busy thoroughfare to catch one of the Public Service transit buses. The eye witness story was that she darted across the street right in the path of oncoming traffic and she was struck by a vehicle moving within the speed limit. The front part of the car struck this lady and hurled her about 50 feet. The autopsy findings in this case were: Multiple body contusions; depressed skull fracture, left fronto-parietal area; linear skull fractures, multiple; subdural hemorrhage, occipital area; laceration of left temporal lobe of brain; multiple hematoma of transverse meso-colon; and laceration of spleen. The interesting feature about this case was that this lady, though leaving her house, had a blood alcohol level of 0.25 per cent which places her in a state of inebriation. Certainly we feel that if this lady had not had this particularly high blood alcohol level her sense of judgment would have been much more certain, and probably she would be alive today.

The total number of incidence of alcohol in fatal traffic accidents was 56. Out of the 56 traffic fatality cases 28 were positive, ranging three at 0.01 to 0.04 per cent, 10 at 0.05 to 0.14 per cent, 7 at 0.15 to 0.24 per cent, and 8 at 0.25 to 0.39 per cent. An interesting feature of this analysis is that the highest number of 10 that ranged from 0.05 to 0.14 per cent was at the level of social drinking so maybe this wise old saying of "One for the road" is not so correct.

Suicide

Interesting as it may seem and against the popular belief that most people who are contemplating suicide usually render themselves insensible by imbibing of alcoholic drinks, according to statistics that we have for the year in incidence of alcoholism in suicides (Table 1), out of a total of 51 cases only 13 were positive for blood alcohol content. This entails 34 white males, 14 white females, 1 negro male and 2 negro females.

The interesting feature out of all these statistics is that the most destructive method of suicide (firearms) is where we find that the alcohol level is greatest. There were 3 cases of 0.01 to 0.04 per cent. There were 3 cases from 0.05 to 0.14 per cent, and there were also 3 cases from 0.15 to 0.24 per cent. It would seem that

TABLE 1
TABLE OF INCIDENCE OF ALCOHOLISM IN SUICIDES

Manner of Suicide	Total No. of Cases	Negative	Alcoholic Content of Brain, Gastric Contents or Blood Per Cent			
			0.01 0.04	0.05 0.14	0.15 0.24	0.25 0.39
Poisoning by analgesic and soporific substances	1	1	.....	.....	.....	.....
Poisoning by other solid and liquid substances	4	3	.....	.....	1	.....
Hanging and strangulation	3	3	.....	.....	.....	.....
Drowning	1	.....	.....	1	.....	.....
Firearms	23	14	3	3	3	.....
Sharp instruments	3	1	.....	2	.....	.....
Jumping from high place	1	1	.....	.....	.....	.....
TOTALS	36	23	3	6	4	.....

* This represents the levels on persons who died withintwenty-four hours of the act of suicide.

in this type of suicide the individual had to have some form of assistance in lowering his intelligence and decreasing his inhibitions. There was only one case of alcoholic inebriation in poisons by solid or liquid substances and only two where sharp instruments were employed. So in this case alcohol has been blamed for something for which it is not guilty. We tend to lean more towards the belief that people who commit suicide are momentarily deranged and not drunk or depressed from drinking or imbibing alcohol. In the majority of cases in which suicide occurred, the men were negative for alcohol but this is not true in females.

In this vein, we have the case of a 58-year old white female who, according to her family had attempted suicide 8 times before her final act of drinking Sani-Flush. Her blood alcohol content was 0.05 per cent and while that is not considered too high, it does show that she evidently needed the extra stimulation to work herself up to the point of carrying through her resolution to do away with herself. The autopsy findings in her case were: Corrosive gastritis and pulmonary emphysema.

A rare instance is the case of a 48-year old white male who had been drinking with his brother at the brother's residence. The latter kept a revolver under his bed pillow and the story is that while they were sitting in the room watching television, the deceased suddenly picked up the gun and stated, "This is a nice piece of work" and added words to the effect that he was tired of living and with his right hand put the gun to his throat and pulled the trigger one time. It was alleged that he had several months earlier written a note threatening to take his own life, however, the note had been destroyed so this fact could not be corroborated.

The autopsy findings were: Gunshot wound of throat; fracture hard palate; laceration of brain; multiple fractures of skull; subarachnoid hemorrhage, and the blood alcohol level was 0.21 per cent.

Homicide

Out of a total of 80 homicides of which 67 were males and 13 females, our records showed that on firearms, sharp instruments and assault by other means, the alcohol content of the blood was as follows: 5 were in the 0.01 to 0.04 per cent range; 14 were again in the social drinking level of 0.05 to 0.14 per cent. There were 12 at 0.15 to 0.24 per cent and 7 at 0.25 to 0.39 per cent. Naturally these are the victims. We have no idea as to what the level was on the perpetrators of these crimes.

In reflecting upon most of the histories that we were able to obtain on homicides that we have investigated, it is apparent that they are usually the result of emotional disturbances or heat of passion. Very few homicides are the cool, calculated murders. In the minority percentage there is the case of the criminal shooting in self-defense. However, I am sure all of you are familiar with the personality changes that alcohol can cause in a person. Sometimes the quiet little milktoast individual becomes the roaring lion, and also, the very placid, jolly good fellow becomes an argumentative, irritating individual. So, too, small inconsequential acts are exaggerated into magnitudinous proportions, which often lead to tragedies. It can be added here that we must consider that from the purely criminal point of view, most of the criminals like to have some stimulant to their ego, and the majority of them commit their crimes while they are drunk.

During a 'drinking spree' domestic troubles often arise between an otherwise completely compatible couple. We have the case of a negro couple who had spent several hours drinking wine at their home. When the husband decided to go out to a bar by himself, an argument ensued and finally there was a fight wherein he pushed the wife causing her to fall and strike her head on the door of the chifferobe. He placed her on the bed and both of them went to sleep. However, the tragedy was that she did not wake up and an autopsy revealed the following: Mas-

sive subdural hematoma; marked cerebral edema; subarachnoid hemorrhage; contusion of brain (base left temporal lobe); mild chronic pyelonephritis; and fatty liver. The blood alcohol content was 0.15 per cent.

A more obsolete case is homicide by intervention of the police. An incident occurred a short time ago when an elderly white male went berserk after drinking a considerable amount of wine. The police were called to quell the disturbance, however, when they tried to enter his room the old man greeted them by firing at them with a shotgun. One of the policemen was struck by the gunfire and when it became apparent that the old man could not be quieted and was going to continue shooting, it was necessary for the police to return the gunfire. The old man was hit and died immediately. The autopsy findings were: Gunshot wounds of chest involving left and right lung and aorta; gunshot wounds involving left arm, right leg, and left groin; and bilateral hemothorax. It is interesting to note that the alcohol content in the blood was 0.25 per cent.

Accidental Death

The incidence of alcohol in the blood plays a great part in accidental deaths. While we cannot state that alcohol is entirely responsible, we can reiterate that poor judgment and poor coordination of body facilities can be attributed to alcohol in the system. In tests run in our laboratory for the presence of alcohol in the blood, brain or gastric contents of persons who died within twenty-four hours of the accident and, of course, excluding children under 12 years of age, 45 per cent of them were positive. Breaking this figure down, 5 per cent were in the 0.01 to 0.04 per cent level; 10 per cent in the 0.05 to 0.14 per cent level; 25 per cent were in the 0.15 to 0.24 per cent and 5 per cent in the 0.25 to 0.39 per cent level.

In the third group we have the case of a 63-year old white male who lived alone in an apartment in the rear of the second floor of a residence. The case history of this man was that he was subject to epileptic seizures; however, it was not known whether or not he was taking any medication for this condition. At 11:30 one night the occupants of the lower floor heard a crash in the rear of the building and on investigating found this man lying on the ground. Further investigation revealed that the railing of a small balcony was broken and it was thought that the man had attempted to come downstairs and on coming out on the balcony had stumbled against the railing causing it to give away. It was not known whether or not he had suffered a seizure at this time or whether he was inebriated; however, when the alcohol content in the blood was determined to be 0.25 per cent, it was proven that he certainly had had enough alcohol to render him very unsteady on his feet. An interesting note on this case was that we also ran a test for Dilantin; however, it was found to be negative.

It is very regrettable that the social level, 0.05 to 0.14 per cent, can be held accountable for, or is definitely a factor, in 10 per cent of accidental deaths. For instance, a recent fire in our city took the lives of a young couple and their small baby. It seems that the couple had been out in the evening celebrating their first wedding anniversary. They lived in an attic apartment in the residence of the young man's parents, and there was only one exit from the apartment. That was a stairway inside the house. There was an air conditioner in the front attic window which blocked egress by that opening. The stairway was so engulfed in flames that escape was impossible and all three suffered 1st, 2nd and 3rd degree burns to 90 to 95 per cent of the body surfaces. Noteworthy is the fact that the blood alcohol level in the young wife was 0.11 per cent. The pathologist who performed the autopsy on the young husband stated in the autopsy protocol: "There is a distinct pungent sweet and malt-like odor of alcohol to all of the body tissues." Who knows what might have happened if

this tragic fire had happened on a night when the young couple had not been celebrating? Of course, in this instance the fact that there was only one exit from the apartment was a big factor and we understand that legislation is being considered to remedy such situations. The young father was definitely trying to get his baby out of the holocaust but was overcome before he could do so.

In addition, there is the incidence of alcoholism in accidental drownings. As you all know, it is not always possible to recover the body of a drowned person immediately after the drowning takes place. In many instances, it is two or three days before the body can be located and in such cases we do not run a blood alcohol level on the deceased. Occasionally, however, the body is recovered immediately and artificial respiration can be given.

A recent case, which is not included in the statistics given in this paper, is that of a 35-year old white male who was known to be an excellent swimmer. He and four other people had been spending the afternoon in a 17-foot speed hull. About 6:30 P.M. when they were about 100 yards from shore, the boat began taking on water. Someone in the boat said the plug or sea-cock was out. About this time the speed hull was next to a larger 32-foot pleasure craft. Some unknown person on the larger boat said, "Swim to shore." The deceased started swimming toward the shore, however, after going about one-fourth of the way he called for help and went under. Two female companions helped him to neck-high water and a young boy from the shore dragged him the rest of the way and onto the seawall. A New Orleans Police Department emergency unit was on the scene and its members administered oxygen, but to no avail. An autopsy was performed and the finding was "Death compatible with drowning." The blood alcohol level was 0.12 per cent, which is again in the social drinking level. Why an excellent swimmer who had many times swum farther distances than 100 yards was able to go only approximately 25 yards in this instance is the question. Quite possibly if he had not had the alcohol in his system, he might have remembered the principles of self-preservation.

Conclusion

In conclusion, combining all traumatic deaths which occurred within twenty-four hours of the incident and excluding children, and where the victims were found to be positive for alcohol in the blood, brain, or gastric contents, we arrive at the following percentages: 13.6 per cent were in the 0.01 to 0.04 per cent; 36.4 per cent were in the 0.05 to 0.14 per cent level; 31.8 per cent were in the 0.15 to 0.24 per cent level, and 18.2 per cent were in the 0.25 to 0.39 per cent.

We hope that this paper has brought to your attention the fact that alcohol does play an important part in traumatic deaths and the striking feature, we think, is that most of these traumatic deaths occur at the social level of drinking.

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The Problem of Primary Ovarian Malignancy * †

• The second paragraph of the article expresses the hopes and aims of this interesting study, and the last point of the summary gives the answer to this unfortunate problem.

RONALD G. AUCOIN, M.D.
New Orleans

CARY M. DOUGHERTY, M.D.
Baton Rouge

NADALYN M. COTTEN, B.A.
New Orleans

MALIGNANT disease of the ovary constitutes the darkest of the group of genital tract cancers. Primary tubal carcinoma causes proportionately more deaths while cancer of the uterus strikes more persons, but ovarian malignancy, because of its frequent rate of occurrence, 14 per 100,000 female population annually,[1] and its low curability, 17.4 per cent, five-year survival,[2-4] is the cause for most concern.

This study was undertaken for the purpose of searching for possible weaknesses in the biological behavior of carcinoma of the ovary which could be exploited in an attempt to control the disease. What number of ovarian cancer patients are being "cured" by present methods of treatment? In what number is survival being lengthened? What was the nature of the growth in those who survived? Were there any small or early carcinomas found either within benign neoplasms or at operation for other disease?

Material

Records of patients having malignancy of the ovary were collected from two sources: Charity Hospital at New Orleans, the period of study being July 1, 1937, to December 31, 1958; and the Baton Rouge Pelvic Tumor Registry covering the interval January 1, 1951, to December 31, 1957. There were 226 patients with ovarian carcinoma verified histologically and 50 patients in whom the decision was clinical. It was thought necessary to include all patients who had a clinical diagnosis of ovarian cancer because to accept only those with histological proof of disease would have been to exclude a number of far advanced and terminal ovarian malignancies.

Histologic slides where available were reviewed for all patients who survived two or more years without evidence of disease. All histologic diagnoses were reconsidered.

Observations

Mortality: Table 1 presents survival of all patients followed five years or more with ovarian malignancy in each category of disease as listed. A statement of uncorrected survival rate appears in this table.

TABLE 1
ABSOLUTE SURVIVAL RATE AMONG PATIENTS TREATED FOR CARCINOMA OF THE OVARY, 1937-1955

Type Malignancy	No. of Patients	L & W 5 Years After Rx	Survival Rate
Adenocarcinoma, all	148	24	16.2%
Carcinoma, anaplastic	11	0	0 %
Dysontogenetic	3	1	33.3%
Other and unspecified	41	1	2.4%
All types	203	26	12.8%

Type Treatment: Figure 1 graphs the type treatment used to bring about these results. Surgical removal was performed

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 3, 1960, in Baton Rouge, La.

† From the Walter E. Levy, Jr., Memorial Laboratory for Gynecologic Pathology, Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans.

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whenever in the operator's opinion it was technically possible. When radiation was used it was administered either to six pelvic portals totalling 3250 r tumor dose, or occasionally, to the entire abdomen. Colloidal radioactive gold was used in 3 cases.

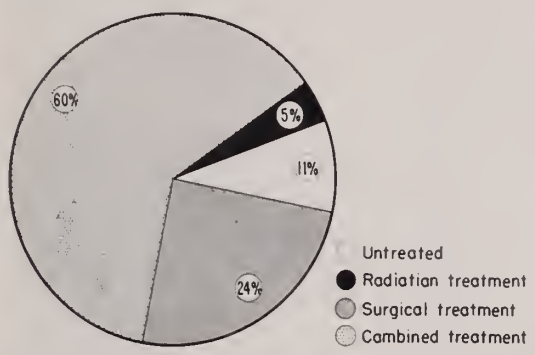


Figure 1. Type of treatment, 276 patients, ovarian carcinoma.

Length of survival: The average time of survival counted from first hospital admission was compared in treated and in untreated patients. In order to obtain some idea of the effect of treatment on the course of disease, a comparison was made between far advanced carcinoma cases only; those women who were followed two or more years and found not to have recurrence were excluded. The average survival time for all fully treated patients was 15.8 months, while untreated patients lived 2.2 months.

Histologic type of tumor in survivors: There were 26 women who survived five or more years and 39 who were followed two or more years without evidence of recurrence. In all of the instances the original diagnosis was carcinoma of the ovary. The initial diagnosis was not sustained in 9 of these tumors. Cases in which a difference arose between the initial and the review opinion were grouped into three categories. First, the original was reported as malignant, the review was benign. Most of these tumors were of the cystadenoma type. The following is a typical case history of such a patient:

Illustrative case history No. 1: E. S., 32 year old colored female, was admitted to the hospital because of dysmenorrhea for two years' duration. Physical examination revealed a large pelvic mass. At the time of laparotomy a large 20 by 30 cm. cyst was found. A total abdominal hysterectomy and bilateral salpingo-oophorectomy were done and followed by x-ray therapy. The cyst was ruptured during removal and contents spilled into the abdomen. Microscopically, the lining of the cyst was medium columnar epithelium with many papillary projections (Figure 2). Everywhere the

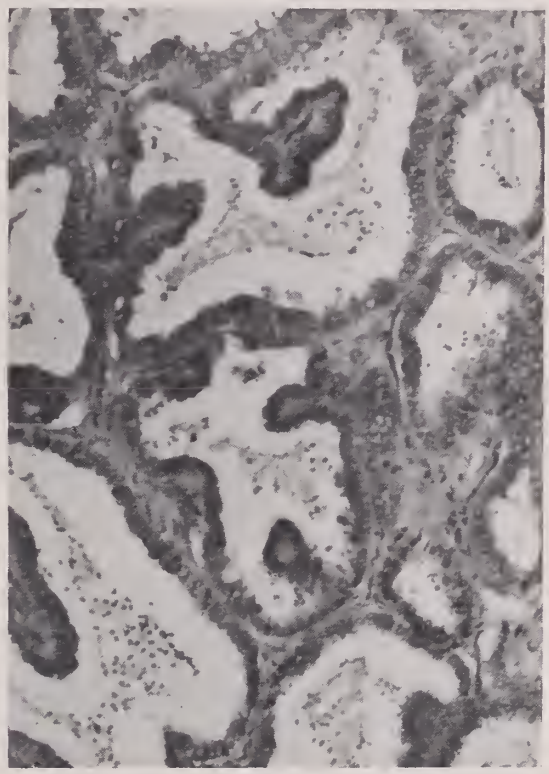


Figure 2. Serous cystadenoma (Case No. 1) showing a moderately proliferated pattern but with epithelium one layer thick in all parts of the tumor. 340X

epithelium was one layer thick, and no areas of definite invasion of capsule or ovary could be seen. The review diagnosis was cystadenoma because of absence of microscopic criteria of malignancy. The patient was well without evidence of disease five years eight months after operation.

In the second category of cases where original and review diagnoses differed the first diagnosis was adenocarcinoma while the latter one was a special or dysontogenetic tumor. The terms, "embryonal carcinoma", "undifferentiated carcinoma", appeared on these records. An unusual neoplasm illustrates this group:

Illustrative case No. 2: A. B., 34 year old Negro, was seen for excessive menstrual flow, irregular bleeding between periods, and swelling of the

abdomen for one year. A pelvic mass found at examination was removed by laparotomy. It was cystic, free of adhesions to adjacent organs, and showed no signs of spread. Following removal a diagnosis of cystadenocarcinoma was made and the patient was given radiation. Later, after review of the sections the tumor was seen to be a granulosa cell tumor with several cystic areas. The architecture was microfollicular and gyriform. The probable hormonal nature of this growth was suggested by the history of irregular bleeding. The patient was alive and well nine years after treatment.

Third, the original slides did not support the original diagnosis because inadequate samples were taken or because a non-neoplastic lesion was mistaken for carcinoma.

Illustrative case No. 3: A. H., 39 year old Negro, was admitted to the hospital because of abdominal pain and amenorrhea of six months' duration. On examination a firm mass was palpated in the cul-de-sac. The examiner thought that the uterus was enlarged to the size of 26 weeks' gestation. A total abdominal hysterectomy and bilateral salpingo-oophorectomy operation followed by radium implantation constituted treatment. The original microscopic diagnosis was papillary cystadenocarcinoma of the ovary. A section of the opposite ovary showed an area where there were several gland structures near the surface. This was taken to be a metastatic spread from the primary growth. When the slides were reviewed it was decided that these glands represented only cortical inclusions in a senile ovary (Figure 3). No evidence of disease could be found eight years and eight months after hospitalization.

The remainder of the neoplasms were undoubted and unequivocal adenocarcinomas, in all, 17 tumors. Several specimens included tissue from metastatic sites, proving the malignant nature of the growth. After review of complete records and slides in all survivors it was concluded that there were five times when evidence indicated that a benign cystadenoma underwent focal or diffuse malignant change.

Illustrative Case No. 4: E. E., 30 year old colored female, was admitted with a chief complaint of pain in the lower abdomen of two months' duration. Physical examination revealed a pelvic mass the size of twenty weeks' gestation. Total abdominal hysterectomy and bilateral salpingo-oophorectomy were carried out and followed by external radiation. The histological diagnosis was papillary pseudomucinous cystadenocarcinoma (Figure 4). In many parts of the specimen a clear transition from simple columnar to proliferated anaplastic epithelial growth can be seen (Figure 5).

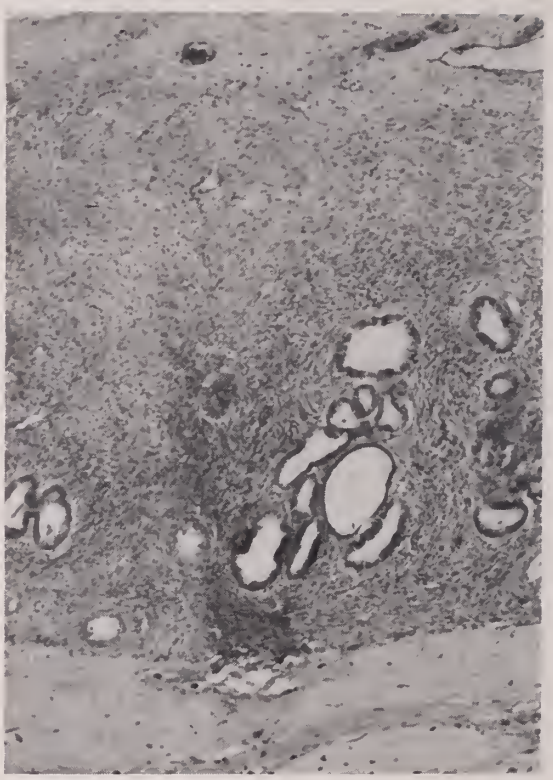


Figure 3. Small gland-like spaces in the peripheral region of the unaffected ovary in Case No. 3. These are interpreted as cortical inclusions and not metastatic adenocarcinoma. 110X

Illustrative case No. 5: B. F., 42 year old colored female, was admitted with a chief complaint of abnormal vaginal bleeding of seven months' duration. A 5 by 5 cm. cystic mass in the left adnexa was discovered and removed by laparotomy. Total abdominal hysterectomy and bilateral salpingo-oophorectomy were done and followed by x-ray therapy. Several sections of the specimen showed zones of transition from a single layer of columnar epithelium to a highly proliferated stratified profusion of the same type cells (Figure 6). In other areas there was a growth of malignant-appearing epithelium with all the characteristics of carcinoma (Figure 7). The final opinion was serous papillary cystadenocarcinoma developing in a cystadenoma. The patient has remained symptom-free for more than two years.

There were seven "cures" among patients with clinical evidence of spread beyond the ovary, one of whom had ascites at the time of surgical operation. These are women who would not have been expected to survive the disease.

Illustrative case No. 6: L. H., 54 year old Negro, was hospitalized for pain in the lower abdomen of four weeks' duration. Physical examination revealed a large firm mass filling the pelvis and

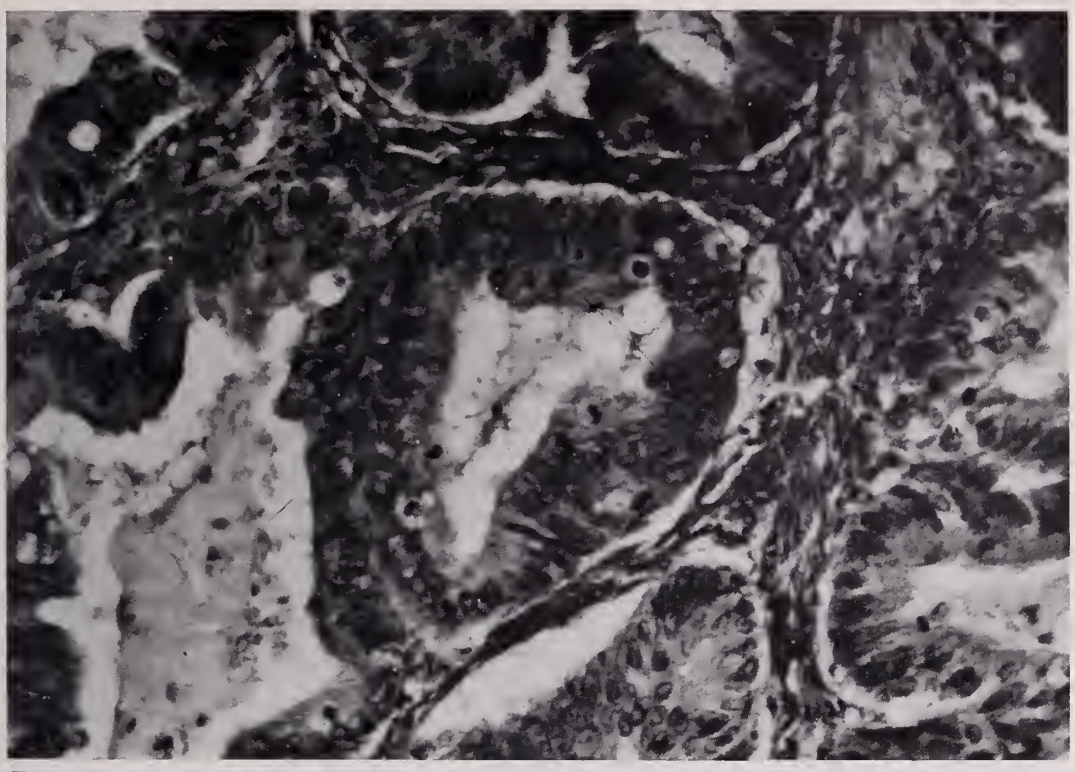


Figure 4. Pseudomucinous cystadenocarcinoma showing typical mucin producing columnar epithelium in case No. 4. 340X

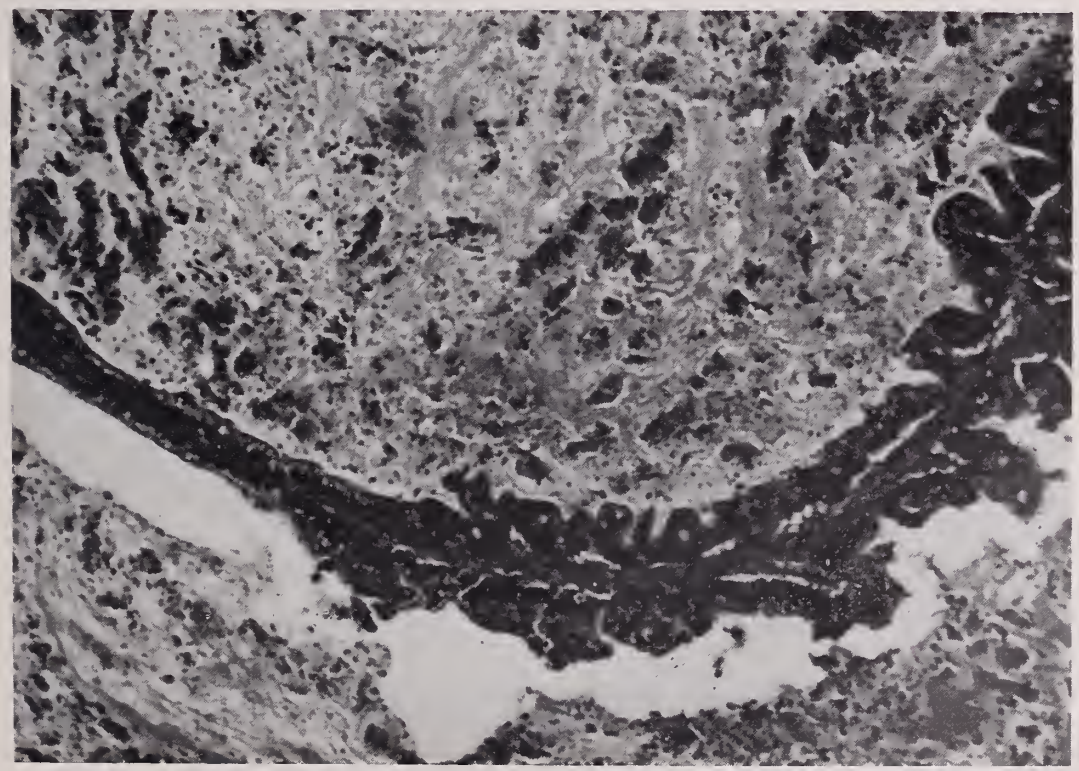


Figure 5. Area of ovarian tumor (Case No. 4) showing transition from simple columnar epithelium to highly proliferated malignant growth of epithelium. 110X

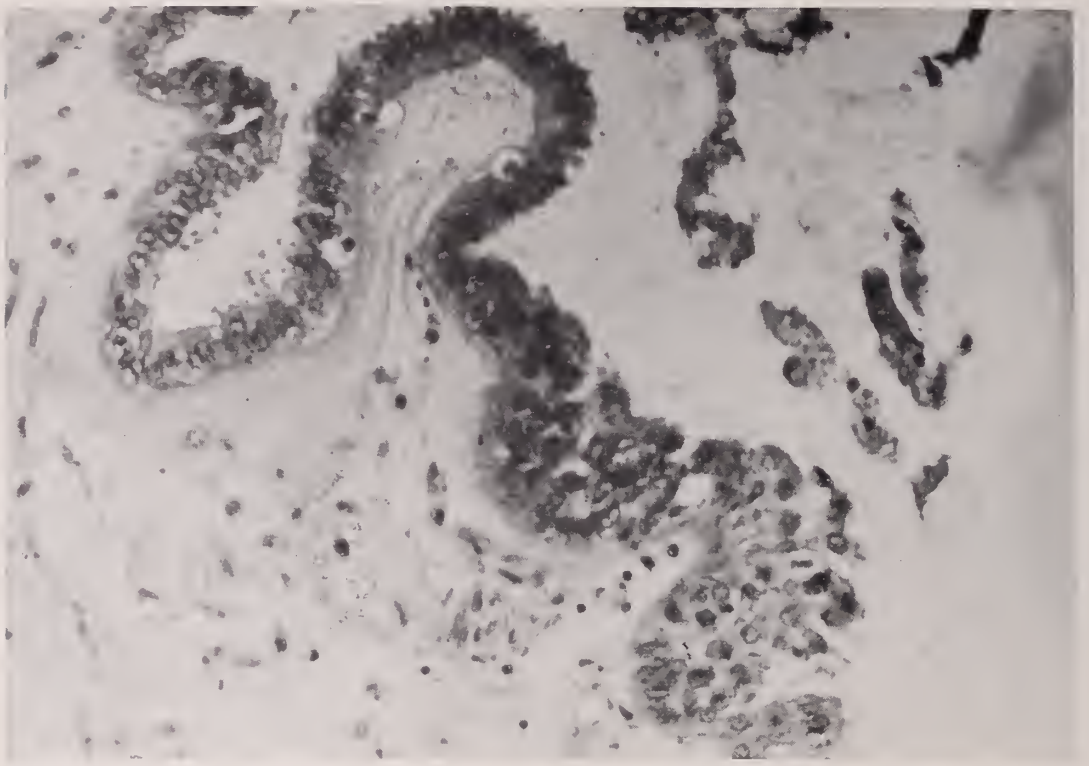


Figure 6. Serous cystadenocarcinoma (Case No. 5) showing benign epithelium (upper left) bordering malignant epithelium (lower right). 340X

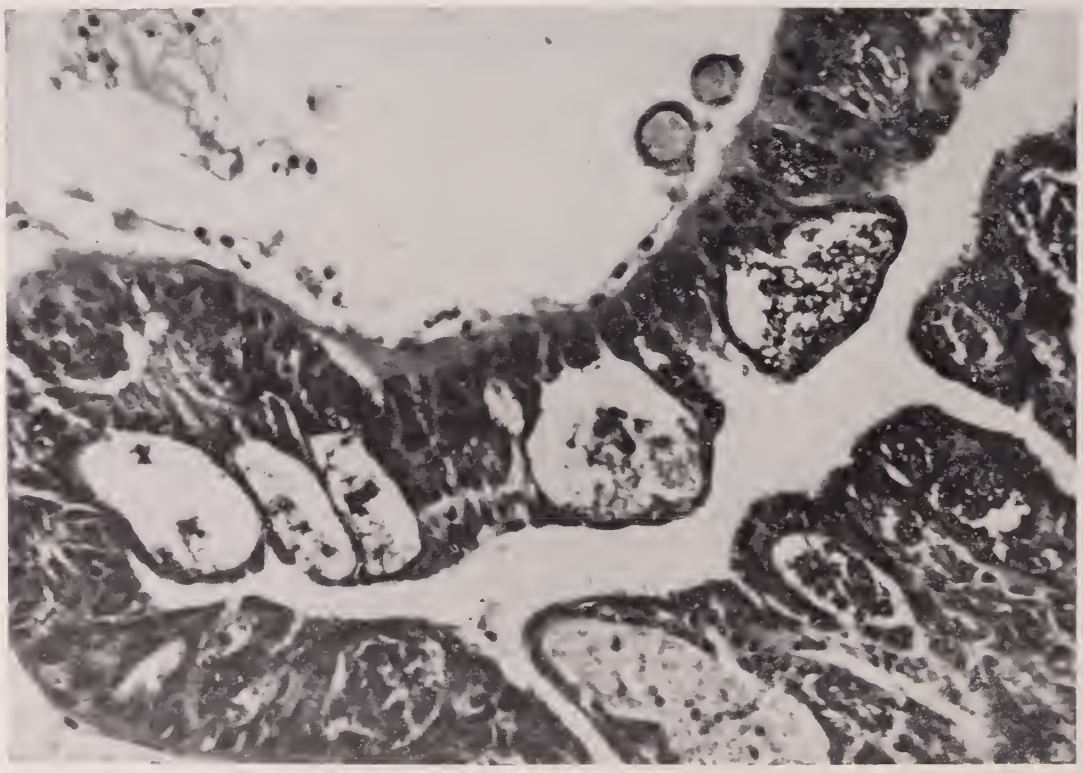


Figure 7. Stratified and highly proliferated epithelium in serous cystadenocarcinoma (Case No. 5). 340X

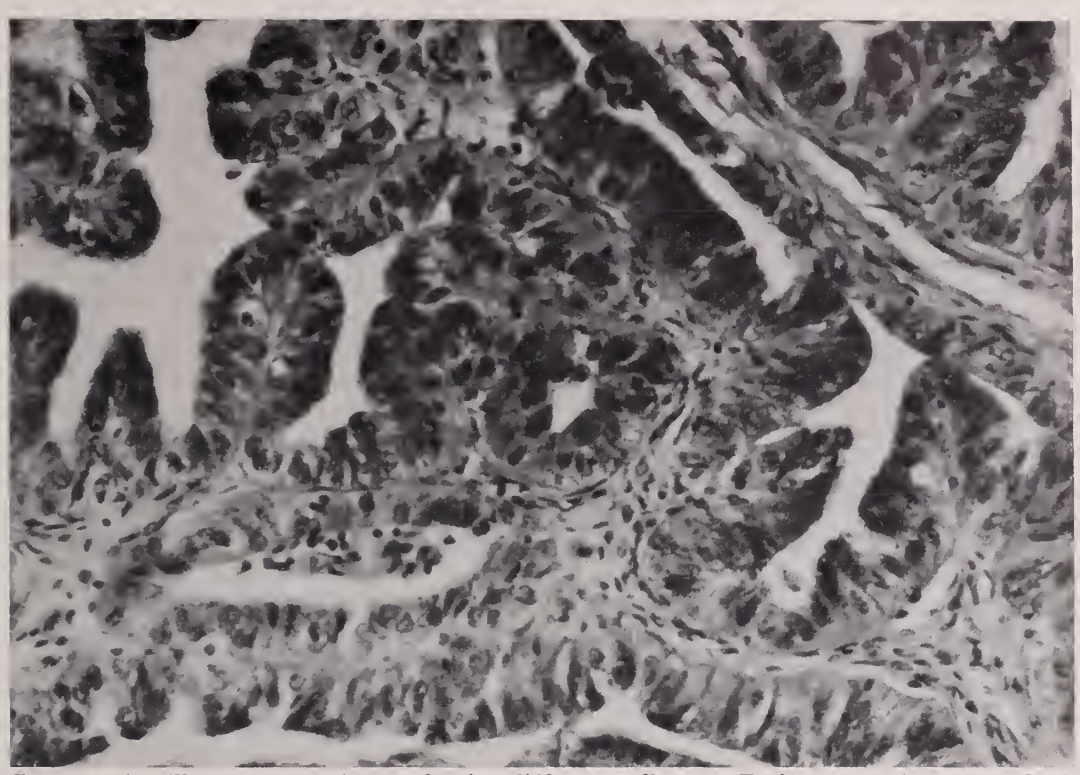


Figure 8. Papillary adenocarcinoma showing different cell type. Entire tumor is composed of tall columnar epithelium resembling that found in endometrial carcinoma (Case No. 6). 340X

extending almost to the umbilicus. The surgical removal of the cyst found at laparotomy was difficult, as it was adherent to the lateral pelvic wall. It was ruptured during the operation. Bleeding was profuse and the patient went into surgical shock. The operator had to be content with subtotal hysterectomy and bilateral salpingo-oophorectomy. Radiation therapy was administered postoperatively. Microscopic examination of the cystic tumor showed papillary adenocarcinoma of the large cell type (Figure 8). Sections of the cyst wall showed a simple columnar epithelium. This patient has been well and free of disease for nine years and six months.

Incidental microscopic carcinoma: None was found.

Mortality

With minor exceptions the survival rate from ovarian cancer depends upon factors beyond the immediate control of the clinician. The 12.8 per cent survival among patients of this study group is somewhat less than the average rate reported by others. The one hope of bettering this figure has not yet materialized — earlier diagnosis. Indeed, the inaccessibility of the site to diagnostic approach renders this hope small.

Treatment

There has been no change in method of treatment for the period of study, and probably for many years prior. Main reliance was placed upon surgical removal of the pelvic organs, with postoperative radiation if removal of neoplasm was not complete. Again, chance seemed to govern whether removal could be accomplished in these patients, or whether the tumors were encapsulated or not.

It can be deduced from this study that the best effort at treatment, complete or not, increases the length of life of some patients having advanced carcinoma. Even though this period is not symptom-free, it can be safely assumed that, in general, the lengthening of survival is desirable. For these considerations it is the standing policy that all patients with clinically advanced carcinoma of the ovary are managed by exploratory operation and attempt at removal, or, failing that, biopsy of the growth.

Histological Type

In this study there was no attempt to interpret the microscopic findings without knowledge of the clinical outcome. In fact, the opposite approach was deliberately used. It was thought that by an analysis of the histopathology of the known "cures" prognostic factors might come to light. Certain generalizations seem warranted by this investigation. The solid or cauliflower type adenocarcinoma is almost uniformly hopeless of cure. The carcinomas developing in a benign cystadenoma on the other hand comprise the group in which cure can be anticipated in most cases. The highly proliferated serous cystadenoma, while strongly suggesting carcinoma, behaves in a benign fashion in almost all instances. Last, it is important to recognize granulosa cell tumor and dysgerminoma because of the better outlook for the patient.

Improvement of Results

No difference could be found in the results when the ovarian cyst was removed intact and when it was ruptured in removal. While we do not advocate disregarding precautions against spillage of contents, it is possible that this plays a minor role in causing recurrence. Many of the patients who survived had cyst contents spilled either by paracentesis or by rupture of an adherent cyst at time of removal.

Early diagnosis appears no nearer now than at the beginning of the study period. No new procedures or aids have been found. Vaginal cytology, while not universally available to these patients, was used frequently, without noticeable effect.

The only innovation in treatment, intraperitoneal colloidal radioactive gold, was used in three cases following surgery. Two of these cases are included in our survival group. Experience of others, however, indicates that it is not curative.

Although it is a gloomy admission to make, there does not seem to be immediate promise of improvement of results in the management of malignancy of the ovary, barring a breakthrough of some kind in diagnosis or treatment.

Summary

1. The study comprised 276 patients having ovarian malignancy of all types. These were consecutive instances of disease from Charity Hospital at New Orleans from July 1, 1937, to December 31, 1958, and from the Baton Rouge Pelvic Tumor Registry in the period January 1, 1951, to December 31, 1957.

2. Of the total, 203 patients were eligible for five-year follow-up, 12.8 per cent are known to be living and well five or more years with no evidence of recurrence; 44 patients were discharged with terminal stage of disease, were not seen again and are presumed to have died of carcinoma; 3 patients were discharged free of disease and have not been followed. These 3 are not included in five-year survivals.

3. Errors in the initial histological diagnosis were found in 9 cases in which the patient survived.

4. There were 4 women having solid adenocarcinoma who responded to treatment.

5. Barring a major breakthrough in diagnosis or treatment little hope in improving results can be foreseen.

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Preplacement Examination Of the Lumbosacral Spine Objectives, Considerations, and Value*

• The preplacement examination is valuable in saving monetary loss, time loss, and in bringing about the most satisfactory utilization of all available man power.

ROBERT D. MORETON, M.D.†
Fort Worth, Texas

IT IS a privilege for me to give this lecture in memory of such a great radiologist, physician, and citizen. I had the pleasure of knowing Dr. Menville, but Dr. Ane has paid this tribute to him much better than I could have done.

This subject of the "Industrial Back" is one which has come into focus more distinctly in the past few years. In the primary rural economy that prevailed decades ago, our nation was no less in need of man power than is our industrial economy today. Communities were small and through personal acquaintance the special aptitudes and weaknesses of an individual were known. Therefore, information gained today by the employer, even after much effort, was at that time common knowledge. Thus, the problem was handled in a more philosophical than scientific manner.

In recent years, the medical literature has given considerable space to various examination programs for workers in industry. A good share of this literature has been devoted to the lumbosacral spine. As Runge has pointed out, there is no single condition where skilled labor is involved that causes more loss of man hours than low back symptoms. Coulter observed that 79 per cent of back strains were in the lumbosacral area. The lumbosacral spine is apparently more vulnerable to injury for three reasons: first, it is least protected by supporting structures in the region; second, it is more often subjected to excessive strain in lifting and bending than are other sections of the vertebral column; and third, the lumbosacral region is more frequently the site of anomalies than any other part of the body.

Our military experience in the present generation has amplified the use of the scientific approach to proper placement and maintenance of personnel in positions where they will be most productive. Now at least one governmental agency has been using a measuring stick of this type to determine which of its employees shall be retained in service. These efforts represent our scientific attack upon the problem of more satisfactory placement and maintenance of our industrial population.

Need For Examination

Some types of pre-employment physical examinations have been carried out since their inception some forty years ago. Cushway and Maier reported on routine examination of the spine for industrial employees in March of 1929. The necessity for this type of examination has been further emphasized by the steady increase in the number of so-called "industrial backs" in the recent past. Becker reported that from 1940 to 1950, Ohio had an increase of 31 per cent in employment, and that during that period there was a 132 per cent increase in back injuries. In the same decade, with an increase of only 7 per

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† Bond Radiological Group, 1217 West Cannon St., Fort Worth, Texas; Associate Professor of Clinical Radiology, Southwestern Medical School.

cent in the industrial force of New York, back injuries increased 43 per cent. Minnesota with a 57 per cent increase in its industrial force experienced an 80 per cent increase in back injuries. The monetary significance of these observations is illustrated by a year's experience in the commonwealth of Pennsylvania, with over 6,900 back injuries reported and nearly $1,500,000 in related compensation payments. According to Carney, these conditions cost the American railroads 29 million dollars in claims in 1941. In 1951, only ten years later, and each year thereafter, over 100 million dollars have been paid out, even though accidents were reduced.

X-Ray Examination

Because the greatest number of man hours lost from work on account of back complaints occurred in a relatively small segment of the men employed, a program of x-ray investigation of prospective employees in the job categories involved was undertaken. Many plans, ranging from a single anteroposterior view of the lumbar area to roentgen examination of the entire spine, were found to be used in other surveys of this type. Since most back complaints are confined to the low back area, and most lesions demonstrated by radiographs are in the region of the fourth and fifth lumbar vertebrae and upper sacral segments — it was concluded that these areas would hold the center of our attention, although the adjacent areas would also be observed. To adequately accomplish this in a survey type investigation, it was concluded that four views would be essential—namely, anteroposterior and lateral made on 14 by 17-inch films with the latter centered 1½ inches below the crest of the ilium, right and left obliques on 10 by 12-inch films centered at the lumbosacral interspace.

A study of surveys being conducted showed some lack of uniformity as to the handling of the various abnormalities observed on the radiographs. Often a list of abnormal conditions was given the doctor performing the examination with instructions to disqualify for service those applicants showing certain abnormalities. In many instances, the x-ray examinations were done by one not particularly interested in the program, resulting in inferior radiographs, and in the examining physician using his own judgment as to a man's acceptability for employment. It is readily understandable that on occasion misunderstandings would occur between the employing officer and examining physician as to what constituted satisfactory physical standards for a given assignment. We, therefore, decided that we should not only specify the type of roentgen investigation the prospective employee should have, but also should not ask the radiologist or the examining physician to act as final judge in accepting or rejecting the applicant. We should rather give the hiring officer the benefit of our combined findings, along with certain standards that would enable him to appraise more satisfactorily the applicant at hand. Through this arrangement, the radiologist would not be called upon to correlate roentgen findings with the applicant's clinical status and the physical requirements of the job in question.

Classification

Realizing that the employing officer should not be required to interpret medical terminology, it was decided to grade the various abnormalities into four groups. All prospective employees examined under this program would be placed in one of the following classifications:

Class I: No abnormalities.
Class II: Abnormalities not associated with clinical back complaints.
Class III: Abnormalities rarely associated with clinical back complaints.
Class IV: Abnormalities occasionally associated with clinical back complaints.
Class V: Abnormalities often associated with clinical back complaints.

A list of the pathological conditions that we expected to find was given to a number of orthopedists and other physicians

with considerable experience in industrial medical problems. They were kind enough to give us their opinions as to what place in the proposed classification each abnormality should be listed. Our present classification represents a composite of the views expressed by these physicians, as well as information gained from the medical literature.

Our present practice is to refer the prospective employee for x-ray examination of the low back area after he has passed a satisfactory physical examination for the class of service in question. The radiologist is asked to make the proper classification, depending on the radiographic findings. Preliminary inspection of the films, before the applicant leaves the office, is desirable for two reasons. First, technical defects in the examination can be found and corrected, whereas it would often be impossible to re-examine the applicant at a later date. Secondly, the employing officer can be advised by telephone of the applicant's tentative classification, whereas the delay involved in transmitting the usual written report by mail may cause the applicant to seek employment elsewhere, or delay his accepting a more favorable type of employment, should it be concluded that the roentgen findings preclude his employment in the class of service applied for.

Pre-Existing Lesion and Trauma

We all see patients, many of whom are doing hard physical work with one or more of these anomalies, or evidences of old trauma, carrying out their obligations without difficulty. These abnormalities are apparently compensated for by the muscles and tendons of the back working under increased strain, but supporting the structures at times under undue stress to keep the person symptom free or unaware of their existence. As Flaxman has pointed out, many patients with low back affections work and carry on a normal life until trauma aggravates a pre-existing lesion. Lewin feels that trauma is involved in practically every person who consults a physician for backache or every such case that confronts a physician. The trauma may be severe, minor, or insidious. Pre-existing conditions of the low back are the most common of all body conditions aggravated by trauma. An explanation of this may be that the complaint of backache is so common that hardly anyone, especially the patient, gives it much attention until trauma aggravates the pain. Flaxman states that the presence of a pre-existing lesion (injury or disease), focused in its location by the trauma, firmly anchors the cause of the back disability in the patient's mind. After trauma, regardless of degree, the presence of a pre-existing low back affection and its aggravation is not so easily determined or interpreted from either the medical or medico-legal standpoint.

Our program of preplacement roentgen examination of the lumbosacral spine is carried out in an attempt to ascertain these pre-existing conditions and place the prospective employee in a job which, it is felt, he can adequately handle without undue danger to himself or the public. Similar examinations have been carried out by Breck, Hillsman, and Bascom, Bohart, Barton and Biram, Coulter, Colcher and Hursch, and Stewart, with the percentage of abnormalities ranging from 44 to 85. Our findings in a group of some 20,000 men were similar to those in the above reports.

We feel that our radiographic reports are essentially accurate since, where at all possible, the examinations are carried out by radiologists who realize the extreme importance of good technical examinations, and express an interest in the program. They are reported by the original examiner, and re-evaluated independently after being received for the company. Any discrepancy in the findings is usually re-evaluated by a third radiologist. Many times the first reader may call attention to an abnormality which might have been overlooked. I feel that this combined effort has led to a more accurate classification. The radiographs, along with the hiring orders and original report, are then put on microfilm for safekeeping and further review as indicated.

Abnormalities Noted

For the purpose of presenting this paper, findings on 20,100 backs were reviewed. The average age of the men was about 25 years. All men had filled out applications which indicated no previous history of injury or backache at the time of their physical examination. We found that approximately 19 per cent of these men's backs were placed in Class V. This is slightly less than the findings in 100 soldiers who had no history of back pain as reported by Friedman, Fisher and Van Demark.

Some of the more important abnormalities noted were: marked narrowing of the lumbosacral joint space in 80 or 0.4 per cent, with about half this number having narrowing of an interspace above the lumbosacral level. A total of 196 or 0.97 per cent had hypertrophic spurs over 5 mm. in size. Scoliosis of over 10 mm. deviation was found in 380 or 1.8 per cent. Fractured transverse processes were observed in 25 or 0.12 per cent with fractures of vertebral bodies being noted in 79 or 0.39 per cent, and 7 fractures of the pelvis and hips in 38 or 0.19 per cent. Defects of the pars interarticularis (spondylosis) were observed in 1536 or 7.6 per cent with actual slip of the vertebrae (spondylolisthesis) noted in 714 or 3.5 per cent. This latter figure may be slightly lower than many series, but our criterion is critical, as explained in previous publications.[13] Sacralization of the last lumbar transverse processes with a false joint or pseudoarthrosis and sclerosis was observed in 185 or 0.9 per cent. There was evidence of opaque media in the spinal canal in 19 or 0.09 per cent with 16 or 0.08 per cent revealing evidence of previous back surgery.

A seven-year survey revealed a total of 1098 men in one program, being carefully followed, had filed a report of back injury. Of these men, 146 had obtained pre-placement roentgen examinations of the back. Of this latter group, 20 per cent were in Class I, 30 per cent in Class II, 27 per cent in Class III, 12 per cent in Class IV, and 11 per cent in Class V.

The 28 men in Class I averaged twenty-nine years of age. Their average length of service was thirty-three months. Twenty-five of these had minor injuries (strain or sprain) and 20 lost less than five days. All except one settled for time lost, and the latter had settlement of a suit for $5,000. Three of the men were in major accidents which were not referable to the low back.

There were 45 men in Class II with an agerage age of 25 years, and having been in service an average of twenty-nine months. Forty received minor injuries with 33 losing less than five days. Compensation of these 40 men was not in excess of wages for time lost except for one employee, who alleged to have suffered a ruptured nucleus pulposus, and presented a major area of disagreement in the medical financial field. Five of these men received major injuries with loss of time and compensation compatible.

Thirty-nine men, with an average age of 27 years, were in Class III. They had an average of 27 months' service. Thirty of these were classed as minor injuries. Twenty-four of these men lost less than five days with eight others less than twenty days. All of these employees except one were paid their regular wages, with no area of discord. One had been rejected from service following investigation of former employment before filing a claim. The other 9 received injuries not related to the low back area.

Eighteen men, with an average age of 27 years and having worked an average of nineteen months, were in Class IV. Sixteen experienced minor injuries with all except 3 losing less than five days. One lost ten days and two were separated from service. Only one presented a problem of moderate financial and medical disagreement and settled his suit for $5,000. Two men were injured not related to the low back area.

There were 16 men in Class V, having an average age of 29 years and forty-two months' average service. None of these was involved in major injuries. Twelve of the sixteen lost five days or less while one lost fifteen days, 2 lost two months, and

the other was off three months. None posed a medical or financial problem.

Summary

The growing need for a pre-placement examination of the low back was discussed, and the rationale of the program presented. The need for uniform radiographs and reporting has been pointed out.

The radiological classification should be presented to the hiring officer so that he can place the applicant in a position which is compatible with the findings in the lumbosacral spine.

The pathology found and classifications resulting are compatible with other series which have been reported. Approximately 20 per cent of the applicants were found to have abnormalities often associated with clinical back complaints.

The men placed in positions following these examinations had, on an average, worked many months without injury, thus eliminating the more immediate disability seen in the so-called "unstable back".

Job placement has been worked out rather well, in that the average length of service was essentially the same for all groups. Actually, the longest average length of service was with the Class V. Time loss was somewhat increased with the higher group, as would be expected.

Time loss and compensation for minor injuries directed to the low back have been greatly reduced, especially as compared to a similar group doing the same type work for the same company, as reported in a previous article.[14]

As in the military service, standards as to physical requirements for duty have been modified from time to time, depending on the need for personnel. As additional experience was gained from plans previously in effect, changes appeared to be in order. It is to be assumed, therefore, that, as our information increases, we also will feel justified in making certain changes in the classifications presently in use.

Lastly, we should not lose sight of the objective of the roentgenologic investigation of the low back area as part of the preplacement physical examination. To bring about the most satisfactory utilization of all available man power, it is necessary that each person be placed in a job that is most compatible with his capabilities. A program of this type is undertaken with the hope of helping to accomplish these objectives, and thereby protect the safety, well-being, and earning capacity of not only the employee and employer, but of his fellow worker as well.

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Renocolic Fistula: Report of a Case Due to Tuberculosis*

• The authors report the 112th case of a relatively rare disease entity and give the history and signs and symptoms.

SAM HOBSON, M. D.
E. ADDIS MUNYAN, JR., M. D.
New Orleans

A RENOCOLIC fistula is a relatively rare disease entity. It was, however, known to Hippocrates, and was mentioned by him as a rupture of a renal abscess into the intestines in his *Opera Omnia* in about 460 B.C. It was first clearly described in 1841 by Royer, who felt that it follows a long standing renal infection with probable perirenal abscess. There has been an increase in the frequency of diagnosis of this lesion probably due to x-ray aid to diagnosis. This is demonstrated by the fact that, in 1931, Mertz was able to collect only 31 cases, including 2 of his own; whereas the present case is, to the best of our knowledge, the 112th to be reported.

Renocolic fistulae are the most common of all renovisceral fistulae, although they have been found to penetrate the stomach, duodenum, jejunum, bladder, vagina, and through the diaphragm to the bronchial tree. In view of the close relation of the kidneys and the thin walled colon, with approximately one-third of the anterior nonperitoneal surface of each kidney making direct contact with the colon, it is not remarkable that renocolic fistulae are more common than the other types. (Figure 1).

A renocolic fistula represents a complication of pre-existing kidney disease. It may follow a renal calculus with secondary infection. It may follow a perinephritis and perinephritic abscess. It may follow renal tuberculosis as in the case reported in this paper. It may follow renal carcinoma as in the case reported by Fetter and Varano. The carcinoma in that case originated in the pelvis of the kidney and extended through the renal parenchyma to involve the colonic wall.

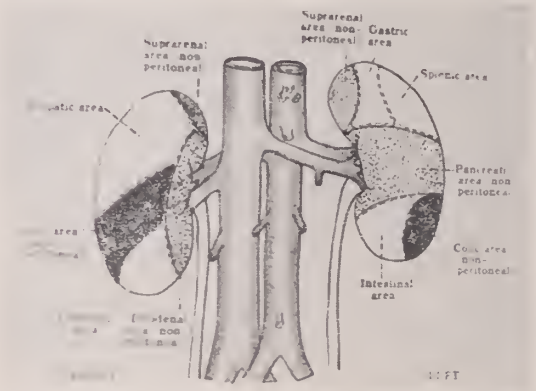


Figure 1.—Diagram showing that approximately $\frac{1}{3}$ of the anterior non-peritoneal surface of the kidneys makes direct contact with the colon. Non-peritoneal colic areas are in solid black. Other non-peritoneal areas are speckled, and areas covered by peritoneum are plain white. (By permission from Morris' Human Anatomy, 10th Edition, by Schaeffer, copyright 1951, Blakiston Division, McGraw-Hill Book Company.)

Symptoms and Signs

Symptoms may vary a great deal. There is usually a history of long standing kidney or urinary tract disturbance, and the patient is usually weak, wasted, and anemic. The outstanding symptoms are chills, fever, renal colic, and tenderness and fullness in the flank. A lumbar tumor frequently forms and may become so large as to protrude anteriorly. The adjacent bowel may become attached to the inflamed kidney by fibrous adhesions.

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, in Baton Rouge.

When perforation occurs fever subsides and the tumor disappears with dramatic suddeness provided the pus is evacuated through the fistulous tract. Blood and pus may be found in the urine or in the stool. In the majority of cases perforation occurs through the renal parenchymal tissue rather than through the pelvis of the kidney. Other signs and symptoms which have been found on occasion are pneumoturia (air in the urine), pneumonephrosis (air in the kidney), diarrhea probably due to the colitis caused by the pus discharged from the kidney, and urinary stones in the feces. Diagnosis is made by retrograde pyelography or barium enema.

Treatment

The treatment of choice, if possible, is nephrectomy and resection of the involved segment of the colon; nephrectomy because the kidney is usually grossly diseased anyway. Resection of the involved segment of the colon is to rid the patient of the disease of the colon immediately adjacent to the fistula, thus diminishing the possibility of persistent postoperative fecalcutaneous fistulae.

Case Report

This was the first Southern Baptist Hospital admission of this forty-nine year old white housewife, who had been complaining of pain in the left flank for about one year.

History of the present illness is as follows: In 1939, she fell on concrete while roller skating. She developed a pyelonephritis with obstruction following the fall. She was hospitalized in Mayfield, Kentucky, for two or three weeks during which time she states she "developed uremic poisoning." The left kidney was opened and drained and she improved.

Following discharge from the hospital she continued to have occasional intermittent attacks of pyelonephritis and left flank pain until 1952. At that time she developed hematuria. She was hospitalized at the Clinton Hospital in Clinton, Kentucky. She stated that she was found to have calculi in the left kidney and that she was given medicine which allegedly dissolved the stones. After three weeks she was discharged but continued to have frequent attacks of pain in the left flank. About one year prior to admission she started having almost constant attacks of left flank pain. She took "Raymonds Little Brownie Pills", 6 daily, p.r.n. which would turn her urine "green as grass" and after about a week of treatment would relieve her for about a week. During the year prior to admission she developed anorexia and lost fifty pounds of weight.

The day before admission she developed chills, fever of 102°F, dyspnea at rest, orthopnea, nausea, vomiting, and burning on urination. She was acutely and chronically ill and obviously anemic, and was admitted to the Southern Baptist Hospital on April 29, 1959.

The review of the systems revealed the following positive findings: Her first husband died of pulmonary tuberculosis eighteen years ago after ten years of marriage. The patient had "had pneumonia dozens of times", diagnosed and treated by her mother. She had dyspnea on slight exertion with the present illness, frequent palpitations, and occasional tachycardia. The remainder of the review of systems was noncontributory. The past history and the family history were noncontributory.

Physical examination on admission revealed a chronically ill, white female, with evidence of recent weight loss. Blood pressure 84 56 mm. Hg., pulse 72 min., respiration 18/min., temperature 102° F.

The significant positive findings were as follows: She had tenderness in both upper quadrants of the abdomen, more on the left, and there was a suggestion of a mass in the left upper quadrant. The chest was clear. The heart demonstrated normal sinus rhythm but the pulmonary second sound was greater than the aortic second sound. There was a Grade II vibratory systolic murmur loudest in the pulmonary area. The remainder of the physical examination was essentially normal.

It was our impression at the time of admission that she had chronic pyelonephritis and congestive heart failure probably secondary to anemia.

Complete blood count revealed a hemoglobin of 8.6 grams, hematocrit of 28 per cent, white blood count of 15,300 with 90 per cent polymorphonuclear leukocytes, 8 lymphocytes, and 2 monocytes.

Urinalysis revealed a trace of albumin and many pus cells. Urine culture yielded aerobactor aerogenes and *E. coli*.

Retrograde pyelograms on May 4, 1959 (Figure 2) revealed changes in the right kidney consistent with old inflammatory disease. On the left side there was gross distortion of the collecting system of the kidney with no remnant of a normal calyceal pattern. There was a large pocket of dye in the region of the kidney pelvis with several trails of dye suggesting filling of sinus tracts. The bilateral abnormalities were described as suggesting possible acid-fast infections.



Figure 2.—Retrograde pyelogram: There is gross distortion of the collecting system of the left kidney which shows no remnant of a normal calyceal pattern. There is a large pocket of dye in the region of the kidney pelvis associated with several trails of dye suggesting filling of sinus tracts. The narrowing of the infundibula of the upper and middle minor calyceal groups of the right kidney is consistent with old inflammatory changes.

The following day a barium enema was performed (Figure 3). In the proximal portion of the descending colon a small fistulous tract was seen in aparent communication with the left kidney. Barium could be seen traversing the left ureter.

On May 14, 1959, the patient was taken to the operating room. In the left upper quadrant of the abdomen a large perirenal abscess was found and entered. The descending colon communicated via the abscess with the pelvis of the left kidney. The margins of the fistulous area of the colon were excised and normal colonic mucosa was identified and repaired by Dr. Francis N. Vallett. Left nephrectomy was then performed by Dr. Harry Zengel.

Pathological examination of the surgical specimen revealed a renocolic fistula with chronic pyelonephritis. Microscopic examination revealed caseation necrosis, tubercule type giant cells and epithelioid reaction. Acid fast bacilli were demonstrated with acid fast stains.



Figure 3.—In the proximal portion of the desending colon a small fistulous tract is in apparent communication with the left renal parenchyma or pelvis. Barium outlines both the tract and the cavity within the parenchyma of the kidney.

Postoperatively the patient did well. She was put on antituberculous medication and discharged from the hospital approximately two months after admission. She has continued to improve; she has gained about fifty pounds and is working as a saleslady in a department store. She continues to take antituberculous drugs (PAS and streptomycin) and has had no recurrence of symptoms.

Conclusion and Summary

Renocolic fistula is a relatively rare finding, there having been 111 cases reported at the time of this writing as far as we are able to determine. Over 75 per cent of these cases have been reported in the past thirty years indicating that it is a disease entity which has been overlooked in the past. Today, with superior x-ray aids to diagnosis, renocolic fistula is becoming a much more frequent finding.

Diagnosis is made by retrograde pyelogram or by barium enema. Ideal treat-

ment usually consists of nephrectomy with resection of the abscess and the affected portion of the bowel.

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Discussion

Dr. Lester W. Eavenson (Metairie): As Dr. Munyan stated, renocolic fistula is a rare condition. The diagnosis, ante-mortem, has been brought about more frequently in recent years by making urography an integral part in evaluating chronic renal disease.

Ritvo and Shauffer state that every reported case has had a primary renal lesion and although tuberculosis is a common cause, many of the reported cases have been secondary to other inflammatory conditions or obstructing urinary calculi.

Urography, thus provides the best method of diagnosis. Caliectasis with marked distortion and extravasation of the opaque medium into the perirenal area should suggest to the examiner the probable presence of this condition. The demonstration of a segment of colon, of course, confirms the diagnosis. The flow may be in one direction only, that is, kidney to colon. However, in most instances the fistulous tract and the renal component, can also be demonstrated by barium enema as in Dr. Munyan's case presented today. One may only demonstrate a common fistulous tract or pocket without actually outlining the other organic component. For example: demonstrate a fistula of the kidney by retrograde pyelogram, and a fistula of the colon by barium enema, both fistula into a common area, but neither examination demonstrating the other organic component.

Again, may I say that renocolic fistula is a complication of renal rather than colon disease. Diagnosis can only be made by extensive and intensive investigation of chronic urinary symptoms and signs.

The Benzoate of Soda in Phthisis

It will be remembered that the attention of the medical profession was aroused in September, last year, by an announcement that phthisis pulmonale in all its different stages could be cured by the very simple remedy, benzoate of soda, used in the shape of inhalations. In the first communication fifteen cases were mentioned, some of them with cavities as large as a fist, which had been cured in this manner in a remarkably short time. The curative effect was attributed to the faculty of the salt in killing the parasitic organisms in the lungs, supposed to be the origin of the disease. The announcement of these marvelous cures sounded very incredible but was sustained by Rokitansky in Innsbruck. (Berliner klinische Wochenschrift)

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Light Coagulation in Retinal Detachment Surgery

• An account of the history, the development of the instrument and technique, as well as experimental and clinical work in light coagulation.

JOHN F. NOWELL, M.D.
GEORGE M. HAIK, M.D.
New Orleans

THE burning of the retina by direct sunlight was the prototype of light coagulation. The blindness following the watching of a solar eclipse was recognized in ancient times; the loss of central vision thereby was described by Plato. The first scientific description of the central scotoma was written by Bonetus (1620-1689). After the invention of the ophthalmoscope, then an eye mirror, Coccius, in 1853, described the progression of the burned area from an exudative spot to a pigmented scar, which is a good description of the lesion even today. The solar eclipse of 1912 produced many cases of eclipse blindness, several hundred of which were described in a series by Cords, Blessing, and Birch-Hirschfeld.

The evolution of light coagulation progressed slowly at first, beginning with experiments by Czerny (1867) and Deutchmann (1882) who focused sunlight with concave mirrors and convex lenses to produce burns in rabbit eyes. An arc-lamp was used similarly by Widmark (1893).

The first experiment with a human case was reported, in 1927, by Maggiore who used sunlight on two eyes destined to be enucleated for malignant tumors.

Recently, Moron-Salas and Meyer-Schwickerath, independently, began to study the therapeutic possibilities of light coagulation of the retina and choroid. As a result of his thorough investigations, Professor Meyer-Schwickerath of Bonn, Germany, has made great strides toward perfecting a useful instrument, and has made valuable contributions concerning the indications, limitations, and methods of applying this form of treatment.[1] His interest was stimulated by studying several patients with macular damage following the solar eclipse of July 10, 1945. One such eye exhibited a small pigmented spot similar to that seen after diathermy coagulation. During the following four years many technical difficulties were overcome by his striving to produce coagulation of the retina by light radiation artificially.

Meanwhile, the dawn of the atomic age broke with a brilliant flash of light, which stimulated further study by Rose, Brown, Byrnes, and Cibis.[2] The light produced by nuclear explosions causes a transient loss of vision from bleaching of visual purple and can produce a coagulation of the choroid and retina even to the point of turning the tissue fluids to steam disrupting the affected area forcibly. Similar "flash burns" were produced and carefully studied by DuPont Guerry and his associates using a carbon-arc searchlight and parabolic mirrors to concentrate the light into rabbit eyes.[3] After measuring the energy available at the cornea, they calculated that from 2-4 cal cm^2 is required to produce an irreversible retinal lesion. They also reported successful treatment of a case of angiomatosis retinae with their experimental machine.[4] The lesion happened to be at the macula, so the patient was instructed to look directly at the light. There was no other way to direct the light beam.

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 3, 1960, in Baton Rouge.

Development of the Instrument and Techniques

The early machines of Meyer-Schwickerath had this same disadvantage of inflexibility. One machine used sunlight with mirrors and lenses to concentrate the light. This was dependent upon meteorologic conditions for adequate light intensity, and the sun kept moving out of the mirrors due to the rotation of the earth. A heliostat attachment followed the sun but reduced the light intensity.

He experimented with mercury-vapor lamps and carbon arc lamps, succeeding to get an effective coagulation in one to two seconds in rabbits only with a Beck carbon-arc which could be loaded to 45 amperes. Changing of carbons was time consuming, their burning produced smoke and soot, and all this produced only enough light to result in a weak and unfocused spot.

These machines had no means of directing the light accurately at a given point in the fundus.

It occurred to Meyer-Schwickerath that in order to avoid the macula and to apply a small coagulation spot accurately to a lesion in the eye, the eye of the observer would have to be included in the radiation procedure. Thus the machine was designed to be used as an ophthalmoscope at the same time that the coagulation occurs. During the development of this apparatus, Meyer-Schwickerath suffered a burn of his own retina, which fortunately was not serious. A filter is now interposed between the observer's eye and the bright light, so that the use of the machine is completely safe when used according to instructions.

All of the disadvantages of the early instruments have been eliminated by the use of a high pressure Xenon lamp. In this, the rare gas xenon is caused to radiate under high pressure in a quartz tube by high amperage direct current. The spectrum of the emitted radiation is similar to daylight, but with proper lenses the ultraviolet rays shorter than 350 millimicrons wavelength and infra-red longer than 1000 millimicrons are filtered out. The intensity of this light can be varied widely. At its maximum it is many times brighter than sunlight. Guerry and Wiesinger calculated this to be 95 cal cm^2/sec for a retinal image of 1 millimeter size.[4]

This spectrum is often referred to as "cold light". However, when this electromagnetic energy is absorbed by the pigmented choroid or iris in the eye, it is transformed into heat energy. Those tissues or any other tissue lying nearby are likewise heated. In the clear media of the eye, light is refracted, reflected, or scattered. At the radiation intensities used in light coagulation only an insignificant amount of energy is absorbed by these structures, namely the cornea, aqueous, lens, and vitreous.

A detached retina, being nonpigmented, must lie one diopter or closer to the choroid in order to be coagulated. More about this will be said later.

A masterpiece of instrumentation has been designed by Littman of the Zeiss Company in West Germany, for Meyer-Schwickerath, in a light coagulator now commercially available, which meets all the above mentioned requirements. The authors obtained such a machine in July 1959, and have since experimented with many rabbits before treating 14 human cases.

Experimental Work

Several general principles were developed as a result of our experiments. Brown eyed rabbits were selected for these experiments, since their pigmentation more nearly simulates human eyes than that of albino rabbits. However, effective burns were obtained in albino rabbit eyes.

It was found that the lower intensities of light were more desirable for fusing the retina and choroid than were the higher intensities, which caused coagulation of the adjacent layers of the sclera, vitreous hemorrhage, and explosive disruption of the tissues involved. With high intensity a more than adequate coagulation spot was obtained before the reaction time of the operator permitted him to terminate the exposure. Thus, it is best to begin with the lowest intensity and gradually increase it until a blanching of

the choroid is seen with one half to one second. This is usually seen at a basic setting of I or II on the machine.

Coagulation near the ora serrata requires a setting of II or III, since the effective pupillary opening is reduced by the oblique angle of the beam. A higher setting is likewise required for coagulation of lightly pigmented areas or through turbid refracting media, which may even prevent an effective coagulation. No injury has been noted by us after using a high "overload" setting on the machine in cases with cloudy vitreous; however, Meyer-Schwickerath has warned that "overload" intensities applied for longer than one second may produce iris atrophy and lens opacities. Long exposure times (longer than two seconds) tend to heat the whole eye rather than a tiny spot.

The minimum intensity required to obtain a coagulation spot in a rabbit's eye was found to be considerably lower than that required in a human eye. This is explained mostly by the larger pupillary opening in the rabbit, which has an area about 2 to 3 times that of a human pupil when fully dilated. In addition, most of the human eyes treated had a turbid vitreous, lens, or cornea, which scattered the light considerably . Since the amount of light entering the eye is directly proportional linearly to the area of the pupillary opening, maximal mydriasis is essential for coagulation of the fundus. These findings were arrived at independently by Meyer-Schwickerath and Guerry.[1, 4]

The size of the coagulation spot in the fundus can be regulated by the diameter of the beam entering the eye measured in degrees on the machine. The diameter of the coagulation spot in millimeters at the fundus of an emmetropic eye is approximately one-third the setting on the machine in degrees. Thus a setting of 3 degrees produces a burn 1 millimeter in diameter. (Since the refracting media of the eye focuses the light on the fundus, cycloplegia is desirable in young people. Contact lenses are used to correct large refractive errors.) A smaller beam tends to be scattered and the heat at the choroid is carried away by the blood circulation. A larger beam tends to heat the iris and cornea unduly. The setting of 3 degrees has been used most in our experience.

Akinesia of the eye with the added help of a scleral suture near the limbus, with which the eye may be turned, is essential to prevent the patient's looking suddenly at the light and obtaining a macular burn. A retrobulbar injection of 1 per cent lidocaine is used.

The cornea should be kept moist with a drop of balanced salt solution every five seconds to counteract the drying effect of the light. Balanced salt solution is found to be superior to normal saline. Topical anesthetics should be avoided.

The ophthalmoscopic appearances of the coagulation spots were recorded on color film by a Zeiss fundus camera immediately after light coagulation and periodically thereafter. A blanched, well circumscribed retinal lesion appears to become slightly edematous within a few hours after light coagulation. After one week the periphery becomes peppered with tiny, pigmented spots and the whitish color turns greyish. After three weeks the entire lesion is flat and is rather evenly peppered with pigment much like old chorioretinitis lesions.

Histologic sections confirm this pattern, and exhibit in addition the rod and cone layer to be destroyed within the lesion and to appear normal immediately beside the lesion, as are the remaining layers of the retina. Within the area of the lesion the retina and choroid are at first edematous, but by the end of three weeks they have become fused into a scar slightly thicker than normal choroid. The primary effect is on retina and choroid with sclera affected least. The reverse is true with diathermy coagulation.

Treatment of Patients

The description of cases treated by the authors is a preliminary report only, and is not intended to be a complete resume of the possibilities of light coagulation. Meyer-Schwickerath and DuPont Guerry and his associates have reported 1000

cases and 42 cases treated by light coagulation, respectively.[4, 5]

Prevention of retinal detachment by light coagulation while the retina is near the choroid and before the vitreous becomes turbid would be most desirable, but most often eyes are presented for treatment with retinas already detached. Coagulation of peripheral degeneration, old chorioretinal scars, retinoschisis, macular holes or cysts, peripheral holes and tears, and perforating injuries in the retina before detachment occurs should effectively prevent detachment from these causes.

Peripheral Retinal Degeneration

In two cases of peripheral retinal degeneration with high myopia, —13 and —18 diopters in a 62-year-old female and in a 56-year-old female, respectively, an equatorial barrage of light coagulation spots was applied. In four months these eyes had not developed retinal detachment. In cases of peripheral retinal degeneration, a new ora serrata can be made with such a barrage of minimal coagulation spots 360 degrees around the equator. Detachment is thus prevented by allowing no subretinal fluid to proceed posterior to the barrage should a peripheral hole or tear later occur.

Macular Hole

Two cases of macular hole with detachment were treated by conservative bed rest and bandaging of both eyes for one week before light coagulation to allow the retina to settle closer to the choroid. One coagulation spot directly into a macular hole was applied in each case. In both cases the vitreous was extremely turbid and the effectiveness of the light was thus reduced. One of these cases had a peripheral retinal tear as well. After continued bed rest and bandaging for a week both cases were treated by a scleral buckling procedure and diathermy coagulation. Had the retina not become replaced by conservative treatment, surgical drainage of subretinal fluid would have been performed before light coagulation of the macular hole.

Peripheral Tears with Detachment

Three cases of retinal detachment from peripheral retinal tears were treated with both surgery and light coagulation. The first case treated with our machine was the right eye of a 66-year-old male which had an old temporal detachment involving the macula, and open angle glaucoma. Vision was light perception and projection only. The fellow eye had no light perception. Light coagulation was performed successfully, but no improvement in vision has been obtained. Prognosis in this case was not considered to be good before treatment.

Another such case was the right eye of a 28-year-old male who suffered a traumatic detachment with a choroidal tear and cloudy vitreous. Vision was 20/100. He was treated by combined scleral resection and diathermy coagulation and light coagulation to seal off the affected area. One month later the retina was redetached and required evacuation of subretinal fluid with diathermy coagulation. His retina has remained attached since then and the vitreous has gradually cleared so that six months post-operation the vision can be corrected to 20/60.

The third such case was that of the right eye of a 33-year-old male, which was complicated by a primary pigmentary glaucoma. The patient noticed a sudden loss of field two weeks before surgery. Visual acuity was 20/50. An upper temporal bullous detachment from a peripheral tear was reattached with diathermy coagulation. Four days post-operation the peripheral tear was sealed off with a ring of light coagulation spots. His retina has remained re-attached and at four and a half months post-operation his vision is corrected to 20/20. The glaucoma is controlled by medication.

Thus, light coagulation can be used before, after, or during retinal detachment surgery provided the retina is close enough to the choroid to be coagulated. Local anesthesia is adequate for light coagulation. In selected cases the need for surgery may be obviated by light coagulation, if

tears and holes can be sealed off before detachment occurs.

Intraocular tumors can be treated by light coagulation. The treatment of von Hippel's angioma by Guerry has been mentioned. Meyer-Schwickerath has treated 27 patients with this disease, all but one successfully. He reports that these tumors should be treated in several sittings to avoid bleeding and retinal detachment from edema fluid. Tumors larger than ½ disc diameter should be coagulated at the center first followed by more peripheral coagulation spots. If the blood circulation in the vessels carries away the heat so that coagulation is not possible, compression of the globe as with an ophthalmodynamometer will stop the flow of blood and permit coagulation.

Meyer-Schwickerath has reported encouraging results in cases of hemangioma of the choroid and retina, choroidal metastatic breast carcinoma, malignant melanoma, and retinoblastoma. The authors have thus far treated no tumors, except a retinoblastoma in the remaining eye of a 2-year-old boy. He had received 5000r of x-radiation and TEM before light coagulation, which is not yet completed. The goal in these cases is to obliterate the blood supply to the tumor by coagulating the vessels in the surrounding normal retina.

It occurred to each of us and to DuPont Guerry [3] independently that light coagulation of active chorioretinitis lesions might be valuable. Two cases have been treated by the authors. One was a 26-year-old male who developed acute chorioretinitis in his left eye two years before light coagulation of the active areas. No specific etiology has been found in his case, and he is being treated also with steroids. Now four and a half months after light coagulation the vitreous is cloudy but gradually clearing.

The second was a 30-year-old male who had yearly exacerbations of chorioretinitis in his right eye for the past seven years. The Sabin dye test and toxoplasmin skin tests were the only positive findings in addition to several discreet chorioretinal lesions nasal to the disc. Treatment with daraprim and sulfadiazine for one month two years ago had little effect. Each lesion was coagulated during an exacerbation four months ago, and daraprim and sulfadiazine were again given for one month thereafter. The vitreous has cleared, and the coagulated spots exhibit no activity. Guerry reports two similar cases.[4]

Surface and Anterior Segment Therapy

An attachment for the light coagulator containing a convex lens makes it possible to treat iris tumors, conjunctival, and skin lesions by light coagulation. Optical iridotomies have been performed in four cases by us with light coagulation, all in aphakic eyes with updrawn iris. Two were successful and two unsuccessful, the latter were complicated beforehand by fibrous downgrowth. In one successful case the opening appeared immediately with a loud popping noise; in the other it appeared several weeks afterward at the site of the coagulation spot.

Limited subcapsular lens opacities have been observed in rabbits following coagulation of the iris. None of these has been seen to progress; however, all human cases for light coagulation iridotomy have been limited to aphakic eyes. The use of a corneal cooling chamber containing balanced salt solution has resulted in no corneal opacities in our experience.

Conclusion

An instrument designed to use high intensity visible light to fuse the retina and choroid in minute circumscribed scars is found to be a clinically valuable adjunct to retinal detachment therapy. Several other uses are becoming manifest in the treatment of intraocular tumors, chorioretinitis, certain skin lesions, and in performing optical iridotomy. The principle is that of the burning glass used to focus the sun's rays to ignite wood. The source of light in this apparatus is an electric arc enclosed in a quartz tube containing xenon gas under high pressure. This light is passed through an optical system of lenses and emerges via an ophthalmoscope mirror. The operator can direct a filtered portion of the beam into the patient's eye, and

when it is accurately placed on the fundus he can switch on the full beam for a fraction of a second. The normal refractive power of the eye focuses the light on the retina, and a minute chorioretinal burn is produced. Several applications will seal off the area under treatment.

The treatment is usually carried out under local anesthesia. The absence of any surgical cutting, the accuracy, and the precise control of the method make it useful in selected cases.

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Treatment of Cancer of the Female Generative Organs By a New (Internal) Method

Prof. John Clay, of Birmingham, England, reports four cases of cancer of the uterus cured by him within a few weeks by means of the internal administration of Chian turpentine. The first case is described as "scirrhous cancer of the cervix and body of the uterus" with excessive hemorrhage, much pain; and marked cachexia; the uterus was so much destroyed that its cavity admitted three fingers readily. Six grains of Chian turpentine with four grains of flower of sulphur were given every four hours. In twelve weeks the patient was much improved in general health, was free from pain and hemorrhages; "the parts feel ragged and uneven and do not bleed on roughly touching them."

"Other cases are under treatment, all showing similar effects. Among them are cases of cancer of the vulva, stomach, and abdomen, in which very remarkable benefit has been already produced." (*Lancet*, March 27, 1870)—*Archives of Medicine.*

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Editorial

The Physician and Practical Politics

As this is written, the Nation is experiencing the national political campaign that comes every four years, and this one is proceeding with its usual turbulence. As physicians observing the contending forces we can take little comfort from what we see and hear. Both parties have adopted what is in substance a socialist platform. Both are committed to a program which, if enacted, would be state medicine or socialized medicine in miniature.

At a recent conference, organized for the purpose of informing and advising the forces of organized medicine, the progressive socialist trend was explained, in regard to its origin and its ultimate aims. This destination will be attained unless effective opposition can be brought from the conservative forces, which up to now, have no way to show their opposition.

Our present situation is the result of effective planning and action by organized minorities. That such could be true in a supposedly democratic or actually representative form of government would be surprising if the facts were not here to prove it. The means by which this is accomplished is effective political organization. The average precinct has from 300 to 1200 registered voters with an average of about 650. Only 50 per cent of these consistently vote in the final election. Accordingly, the actual result of the election may be determined by as few as 26 per cent of the registered voters. In influencing how this 26 per cent may use their votes, the impact of an organized minority can easily become decisive. As the result of the action of this unexpected but important aspect of apathy, successive increments of the socialist plan have been put into law in this nation, including partial state medicine.

The burdens that this has put on the welfare of American medicine were recently considered in these columns. The problem now for the physicians of the nation is what further can be done. The answer is that the only recourse is straight

political pressure at the time of the election and all the year round. To this end, the conservative elements, including physicians, must start boring from within and as individuals become politically active in precinct organization in both parties. This involves change in attitude on the part of the whole medical profession. Politics, in its various manifestations and activities, must be accepted as an urgent duty of citizenship and of the healing art.

For this, there is good precedent. Of the 56 patriots who ultimately signed the Declaration of Independence, 5 were physicians—almost 10 per cent. It is obvious that the physicians of that day regarded the duties of citizenship as paramount. A similar attitude now would contribute Conservative strength to the councils of both parties out of proportion to the number of votes represented by medicine.

Political training courses are becoming organized. Much literature is available as to the actual practices of winning elections. The physician should declare himself a member of a political party, in order to vote in primary elections and have a direct vote in the party's selection of candidates. He should remember the distinction between being an "independent" and being "independent-minded." The individual affiliated with no party is almost voiceless in political decisions. We should vote regularly at every election and understand the structure by which the party operates in our respective states. We should know our officers at the precinct, parish, and state level. Where possible, we should make ourselves useful to the party organization on election day, and before election let our special talents be known to the ones who are active in the precinct organization. We should contribute financially to the party's funds and encourage others to follow a like example.

These methods have gotten results for organized minorities. These results, if unchecked, by a Conservative effort, will lead in successive steps to the socialist state, then the welfare state, and then to the police state. If 200,000 physicians were each exercising their rights as citizens and contributing to the collective effort of the precinct organizations, the voice of conservatism would be heard and would be listened to. We should never underestimate the importance of a vote. In 1916, a switch of 1904 votes in the State of California would have defeated Woodrow Wilson. In 1948, a switch of 3554 votes in Ohio, and 1807 in Illinois would have sent the presidential election to the House of Representatives. In the United States Senate, one vote has been the determining factor in many important pieces of legislation. The forces of organized medicine for an indefinite time have attempted to mold the legislation properly. This has been accomplished through formal presentations in part, but chiefly by personal influence. We have reached a stage where these two measures are not enough. They must be supported by actual political power, and this comes from only one place. We must, therefore, be active in our precinct organization, and this activity must follow a year-round pattern.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

PERTINENT SUGGESTIONS

In the July 27th issue of "Scope Weekly" the following question was asked of four physicians.

"What do you consider the most important steps that can be taken to enhance the prestige of the medical profession in the eyes of the public?"

The following answer was given by Dr. Gustave P. Milkey of Buffalo, New York which we think is well taken and deserves great consideration.

"I am in favor of presenting to the public the facts that tell the story of progress in the medical profession. No doubt sensationalism will always be with us—the stories that tell in bold headlines of our profession's inadequacies. Therefore, it seems to me it is the duty of every doctor, through all media of information, to testify to the loyalty of the nation's physicians to the principles of their profession. This could well serve to drown out those who tend to belabor what might appear to be inadequacies in the medical profession.

"Let us talk about our role in increasing the longevity of our population, the reduction of periods of illness, and increasing solution of 'incurable' diseases.

"All media of information—the newspapers, lay magazines, radio, television, and individual speakers—should be better utilized to bring to the public the proud accomplishments of the medical profession. The stakes are high, since an alarming decrease in medical school applicants reflects the public's apathy.

"Individual interviews with practicing physicians and medical educators, medical discussions on radio and television for public consumption, development of lay group interest through physician speakers, and a cooperative spirit between disseminating agencies and community medical organizations are means of attaining this objective."

It is hoped that our members will be stimulated to action by reading the above, and, will exercise their God given privileges and faculties in promoting our cause in their respective communities.

FACTS ABOUT CHIROPRACTIC

In accordance with the information contained in the publication just completed on "Chiropractic in California," a publication prepared and published under a grant of the John Randolph Haynes and Dora Haynes Foundation and study report by Stanford Research Institute of California, we find legal opinions on the scope of chiropractic practice in the State of California.

Section 7 of the Chiropractic Act (Calif. Stats. 1923, p. lxxxviii; Deerings Gen. Laws, Act 4811), provides that a license to practice chiropractic "shall authorize the holder thereof to practice chiropractic in the state of California as taught in Chiropractic schools or colleges". This section does not enlarge the usual significance of the term "chiropractic." In California the term has been judicially defined as "a system of (or) the practice of adjusting the joints, especially of the spine, by hand for the curing of disease".

Section 7 of the Chiropractic Act further provides that the licensee is not authorized to practice "medicine, surgery, osteopathy, dentistry or optometry," or to use "any drug or medicine now or hereafter included in materia medica". This limiting language is construed as preventing "a chiropractic licensee from using drugs or medical preparations or severing or penetrating the tissues of human beings."

In the case of Oosterveen vs. Board of Medical Examiners, 112 Cal. App. 2d 201, 205-206, it was held (that) "the use of natural methods of healing is not forbidden by law. Physicians and surgeons, osteopaths, chiropractors and all those who hold licenses as drugless practitioners may use them. It is of common knowledge that nature is the indispensable healing agency and that practitioners of medicine and surgery, osteopathy, and chiropractic make use of the curative qualities of light, air, water, rest, diet, and physical and mental culture, in connection with the agencies peculiar to their several systems of healing" (Petition for Hearing denied by Supreme Court September 11, 1952). However, in this opinion we are not concerned with natural methods, but the facts given. The methods referred to in the facts presented to us clearly indicate the use of a medical preparation and the penetration of tissues of human beings.

An earlier opinion of this office, relating to chiropractic, appropriately states that "specialization in rectal healing could hardly be said to be part of a system of healing which treats disease by manipulation of the spinal column".

Clearly, the use of an anesthetic gelatin constitutes the use of a medication in a course of

treatment and the prohibited practice of medicine by the chiropractor. The injection of an anesthetic solution by the use of a hypodermic needle in the course of treatment also constitutes a forbidden penetration of the tissues (Kendall vs. Bd. of Osteopathic Examiners.)

It appears that there are at least three different technics of electrical surgery which are referred to as "direct fulguration," "indirect fulguration," and "desiccation" (Dorland's The American Illustrated Medical Dictionary, 22nd Edition, 1951). These technics involve the application of high frequency electrical currents in surgical diathermy. These are sometimes referred to as:

1. "Noncontact monoterminal surgical diathermy" or "fulguration";
2. "Contact monoterminal surgical diathermy" or "electrodesiccation"; and
3. "Indirect monoterminal surgical diathermy", or "indirect fulguration". (The Cyclopedia of Medicine and Surgery (1955 ed.) Vol. 4, p. 927).

It is apparent that the use of the electric needle referred to in the opinion request involves the use of one or more of the above technics, and that each and all of said technics constitute the penetration of tissue and the forbidden practice of surgery by a chiropractor.

Not only do the practices described trespass beyond the zone of the Chiropractic Act, but they bear no vestige of kinship to chiropractic as it is traditionally defined.

The chiropractors in their presentation before our legislative Committees in Baton Rouge would have you believe they are permitted unlimited practice in all fields of the healing art. Their claims are distinctly contrary to the facts as furnished by the authenticated legal facts contained in this recent publication on chiropractic. Many of the states which in the past, have licensed these chiropractors have realized their mistake and are, now, preparing to pass legislation making it illegal for them to practice in their respective states. We have been fortunate that our legislators realize the dangers to our good citizens in permitting these wholly unqualified persons to give our citizens medical care and treatment—the big danger being the loss of time spent in treating a condition about which they know nothing, and when the patient finally applies for treatment by an M. D. qualified to treat such conditions it is too late and the case turns out to be hopeless.

We would recommend that all physicians interested in the subject of chiropractic secure a copy of the above publication. It contains many facts which all physicians should know.

LEGISLATION IN WASHINGTON

As we go to press, we would like to remind our members that the United States Senate on August 23 passed a slightly modified Mills House Bill which the medical profession through the efforts of the AMA and our respective State Medical Societies or Associations have so strongly supported. This is a wonderful victory for our profession and the indigent elderly citizens of our country. We are very happy that no compulsory medical care legislation was forced upon our profession or our independent and broad minded thinking members of our older group citizens. The oldsters under this new legislation will be free to choose their personal physician and free to exercise their own judgment as to whether they desire to participate in this program.

We wish to thank our Louisiana Senators and Congressmen for their support of this type of legislation, free from compulsion and social security entanglements.

We can now say that we have fought a good fight and won the battle for our older citizens and against compulsory socialized legislation.

However, let us not be too forgetful and complacent but continue to prepare for, and keep our defense lines strong to oppose any and all compulsory medical legislation which may be proposed in any future session of Congress.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POSTGRADUATE COURSES ON DISEASES OF THE CHEST

Two postgraduate courses on diseases of the chest have been announced by Dr. J. Winthrop Peabody, Sr., Washington, D. C., Chairman of the Council on Postgraduate Medical Education of the American College of Chest Physicians.

The first of these, the 15th annual course, **Clinical Cardiopulmonary Physiology,** has been arranged under the co-chairmanship of Dr. Albert H. Andrews, Associate Clinical Professor of Bronchoesophagology, University of Illinois College of Medicine, and Dr. Edwin R. Levine, Assistant Professor of Clinical Medicine, Chicago Medical School. This course will be held at the Sheraton Towers Hotel, Chicago, October 24-28, 1960.

The second, the 12th annual course, **Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs,** was arranged under the co-chairmanship of Dr. Edgar Mayer, Clinical Professor of Medicine, New York University Postgraduate Medical Center; Dr. Alfred S. Dooneief, Lecturer in Medicine, Columbia University College of Physicians and Surgeons; and Dr. Emil A. Naclerio, Chief, Thoracic Surgical Services, Harlem and Columbus Hospitals, New York City. This course will take place at the Park Sheraton Hotel, New York City, November 14-18, 1960.

Tuition for each five-day course will be $100 including round table luncheon discussions.

Additional information may be obtained by writing to: Executive Director, American College of Chest Physicians.

AMERICAN ASSOCIATION OF MEDICAL ASSISTANTS

Some 800 medical assistants—the essential right hands for most practicing physicians—are expected to be in attendance at the fourth annual national convention of the American Association of Medical Assistants in Dallas, Texas, October 14-16. The AAMA, an organization whose aims and goals have been commended by the American Medical Association, has a membership of approximately 9000, in 29 chapter states.

Two major segments of the convention program will deal with current problems and future challenges of medical practice. One, an educational seminar, scheduled for the morning of Saturday, October 15, will feature talks on "Waiting Room Atmosphere," "The Hospital, the Doctor and You" and "The Problem of Medical Care in the 60's."

The Challenge of the 60's is the theme of the Second Leadership Seminar, sponsored by Lakeside Laboratories, Inc., scheduled for the afternoon session on the 15th. This seminar will feature lectures on credit and office management plus a round-table discussion of physician-assistant-patient relationships. Participants in the round-table will include two physicians and two medical assistants.

Among the noted physician-speakers scheduled to play a part in this convention will be E. Vincent Askey, M. D., president of the American Medical Association; May Owen, M. D., president of the Texas Medical Association; Milford O. Rouse, M. D., Elliott Mendenhall, M. D. and Edward A. Newell, M. D., all of Dallas, and Leo J. Starry, M. D. of Oklahoma City.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-fourth annual meeting of The New Orleans Graduate Medical Assembly will be held March 6-9, 1961, at the Roosevelt Hotel.

The following members have been appointed to serve on the various Program Committees for this year:

ANESTHESIOLOGY

John Adriani, M. D., Chairman

J. B. Parmley, M. D., Vice-chairman

DERMATOLOGY
Barrett Kennedy, M. D., Chairman
Leslie K. Mundt, M. D., Vice-chairman

GASTROENTEROLOGY
Donovan C. Browne, M. D., Chairman
Benjamin O. Morrison, M. D., Vice-chairman

GENERAL PRACTICE
Esmond A. Fatter, M. D., Chairman
Nicholas J. Chetta, M. D., Vice-chairman

GYNECOLOGY
Woodard D. Beacham, M. D., Chairman
John C. Weed, M. D., Vice-chairman

INTERNAL MEDICINE
Edgar Hull, M. D., Chairman
Charles C. Sprague, M. D., Vice-chairman

OBSTETRICS
Jason H. Collins, M. D., Chairman
Fred O. Brumfield, M. D., Vice-chairman

OPHTHALMOLOGY
George M. Haik, M. D., Chairman
Horace B. Dozier, M. D., Vice-chairman

ORTHOPEDIC SURGERY
Lyon K. Loomis, M. D., Chairman
Irvin Cahen, M. D., Vice-chairman

OTOLARYNGOLOGY
Lucian W. Alexander, M. D., Chairman
Garland Walls, M. D., Vice-chairman

PATHOLOGY
Andrew V. Friedrichs, M. D., Chairman
Ralph M. Hartwell, M. D., Vice-chairman

PEDIATRICS
Roy E. de la Houssaye, M. D., Chairman
Dorothy J. York, M. D., Vice-chairman

PROCTOLOGY
Richard L. Buck, M. D., Chairman
Merrill O. Hines, M. D., Vice-chairman

RADIOLOGY
J. Theo Brierre, M. D., Chairman
Joe V. Hopkins, M. D., Vice-chairman

SURGERY
Ambrose H. Storck, M. D., Chairman
Marshall L. Michel, Jr., M. D., Vice-chairman

UROLOGY
Robert F. Sharp, M. D., Chairman
John G. Menville, M. D., Vice-chairman

TRI-STATE MEDICAL ASSEMBLY (ARK.-LA.-TEX.)

Confederate Memorial Medical Center
Shreveport, Louisiana
September 14, 1960

The plan is to have a concentrated one-day program, which will consist of a series of talks in the morning, and in the afternoon the meeting will be broken up into Workshops in Obstetrics, Surgery, Pediatrics and Medicine. The workshops will give an opportunity for conversation and interchange of ideas with the guest speakers. Case material for the workshops will be presented by the services from Confederate Memorial Medical Center. Speakers and topics are as follows:

WEDNESDAY, SEPTEMBER 14, 1960

8:00 - 9:00 A.M.

Registration, Auditorium, Confederate Memorial.

9:00 - 9:40 A.M.

Dr. Charles W. Crumpton, Cardiologist, University of Wisconsin. The Coronary Profile, Diagnosis and Prevention.

9:40 - 10:30 A.M.

Dr. Donald W. Mulder, Consultant in Neurology, Mayo Clinic, Rochester Minnesota. Epilepsy—Recognition and Management.

10:30 - 10:50 A.M.

Coffee Break.

10:50 - 11:30 A.M.

Dr. Arnold J. Kremen, Professor of Surgery, University of Minnesota. Surgical Consideration of Gastro-Duodenal Ulcers.

11:30 A.M. - 12:20 P.M.

Dr. George H. Schade, Professor of Pediatrics, University of California, San Francisco. Emotional Problems of Childhood and Adolescence.

12:20 - 1:00 P.M.

Dr. Joseph B. Sheffery, Professor of Obstetrics, George Washington University Medical School, Washington, D.C. Newer Developments in Obstetrics.

1:00 - 2:00 P.M.

Lunch and Short Business Meeting in Cafeteria.

2:00 - 4:00 P.M.

Workshops as follows:

Dr. George H. Schade and
Dr. Clarence H. Webb—Pediatrics.

Dr. Charles W. Crumpton and
Dr. M. D. Hargrove—Medicine.

Dr. Arnold J. Kremen and
Dr. Charles L. Black—Surgery.

Dr. Joseph B. Sheffery and
Dr. E. Earl Dilworth—Obstetrics.

6:30 - 8:00 P.M.

Social Hour—East Ridge Country Club.

8:00 - 10:00 P.M.

Dinner and Guest Speaker—East Ridge Country Club.

Guest Speaker: Edmond Souchon, M.D., F.A.C.S. Surgeon, New Orleans, Louisiana; Past President, National Jazz Foundation; Past President and Founding Member, New Orleans Jazz Club. Topic—"The Story of New Orleans Jazz Music"—Illustrated.

Ladies Luncheon and Style Show, c/o Mrs. Roy Brabham, 182 Lynn, Shreveport, and Mrs. Frank Dienst.

Tuesday Evening, 8:00 P.M., Confederate Memorial Center: The guests and their wives are invited to meet with the Shreveport Medical Society members and their wives to hear Dr. George Schade, of the University of California, discuss "The Emotional Growth of Adolescence."

Advanced registration is urged because of the one-day meeting. Registration fee of $10.00

covers lunch and one dinner ticket, additional dinner tickets for wives or guests are $5.00.

Officers of the Society are: President — Dr. Blocker Joslin, Atlanta, Texas; Vice-President—Dr. James Harrison, Texarkana, Arkansas; Secretary-Treasurer—Dr. J. W. Wilson, Shreveport, Louisiana; Program Chairman—Dr. Albert M. Hand, Shreveport, Louisiana; Ladies Entertainment—Mrs. Frank Dienst and Mrs. Roy Brabham.

Please send advanced registration to Dr. J. W. Wilson, 940 Margaret Place, Shreveport, Louisiana, or to Dr. A. M. Hand, 915 Margaret Place, Shreveport, Louisiana.

LOUISIANA ACADEMY OF GENERAL PRACTICE

The Louisiana Academy of General Practice will hold its Fourteenth Annual Scientific Assembly on October 11, 12, 13, 1960, at the Municipal Auditorium in Lafayette, Louisiana, it was announced by Dr. Francis I. Nicolle, Secretary of the organization.

At a pre-convention party on the evening of Monday, October 10, the hosts will be Dr. J. William Crookshank, President of the Louisiana Academy of General Practice, and Mrs. Crookshank of Lake Charles and Dr. Ernest B. Flake, President-elect, and Mrs. Flake of Shreveport.

Dr. Eldredge L. Carroll of Columbia, speaker, will open the sessions of the Congress of Delegates on the morning of October 11 at the Evangeline Hotel in Lafayette. Vice-Speaker is Dr. John G. McClure of Welsh.

The scientific portion of this Assembly has been accepted for ten hours Category I credit by the American Academy of General Practice.

Dr. J. William Crookshank, Chairman of the Committee on Scientific Assembly, and the members of his committee have arranged a program of interest to all physicians. Visiting speakers will include Mr. Willard E. Bennett, labor relations superintendent for the Cities Service Refining Corporation in Lake Charles, who will present a paper on **The Hospitalization and Surgical Insurance Problems.** Mr. Bennett is a member of the Advisory Committee of Lamar State College Management Conference and the author of **Manager Selection** and the co-author of **Developing Executive Skills.**

Dr. Don W. Chapman, Clinical Professor of Medicine at the Baylor University College of Medicine in Houston, Texas, will speak on **The Role of Surgery in Acquired Heart Disease** and **The Role of Cholesterol in Arteriosclerosis.** This is Dr. Chapman's second appearance at a Louisiana Academy Assembly.

Dr. I. Phillips Frohman, eminent author and editor and a member of the American Academy of General Practice, will speak on **Medical Writing—A Challenge to the General Physician** and **Diagnosis of Cancer in the G.P.'s Office.** Dr. Frohman is from Washington, D.C., and was the recipient of the 1958 AAGP Ross Award and the 1958 Medical Economics Award.

DUKE UNIVERSITY MEDICAL SCHOOL SPONSORS CRUISE

The Duke University Medical School is sponsoring a postgraduate Medical Seminar Cruise to the West Indies this fall aboard the new KUNGSHOLM, Sweden's largest transatlantic liner and cruise ship. The luxury ship, which will sail from New York City on November 9, will visit the Virgin Islands and San Juan, Puerto Rico, and will return to New York on November 18.

Shipboard lectures on various subjects in medicine, pediatrics and surgery will be given by the following members of the Duke Medical School faculty: Dr. Edwin P. Alyea, Professor of Urology; Dr. Doris Ahlee Howell, Associate Professor of Pediatrics and Pediatric Hematologist; Dr. Elbert L. Persons, Professor of Medicine; Dr. William M. Shingleton, Professor of Surgery; and Dr. William M. Nicholson, Professor of Medicine and Assistant Dean in Charge of Post Graduate Medical Education.

The instructional program will provide twenty hours credit toward postgraduate requirements of the American Academy of General Practice. While designed primarily for the generalist, the program should be of value and interest to the specialist. Informal panel discussions, clinicopathological conferences and formal presentations will be given by members of the faculty.

For further information, write W. M. Nicholson, M. D., Assistant Dean for Postgraduate Medical Education.

SCIENTIFIC PAPER AWARD CONTEST

Southeastern Surgical Congress announces the Prize Scientific Paper Award Contest eligible to residents of approved hospitals in the Southeastern States for the best Scientific papers.

Papers are due at the Congress Office at 340 Boulevard, NE, Atlanta 12, Georgia before December 1, 1960.

The prize for the first prize winner is an all-expense paid trip to the meeting at Miami Beach, Florida, March 6-9, 1961, plus a cash award.

NEW CATALOG OF MEDICAL-HEALTH FILMS AVAILABLE

A revised list of films available from the A.M.A. Motion Picture Library has been prepared and copies are now available upon request. This new catalog lists 175 medical films suitable for showing to medical societies, hospital staff meetings, medical students and other scientific groups. In addition, there are 81 health films of interest to physicians who may be called upon to speak before lay audiences such as service organizations, Parent-Teacher Associations, etc.

The film catalog is completely new in design with such features as eye-ease typography, subject index, alphabetical listing of film titles, order blanks and a system of color coding so that films for the laity and professional audiences may be quickly identified. Copies may be obtained without charge by addressing your request to the American Medical Association, Department of Medical Motion Pictures and Television, 535 North Dearborn Street, Chicago 10, Illinois.

SUN CAN DAMAGE THE EYE DESPITE DARK GLASSES

Smoked glass or dark glasses cannot protect the eye from the direct rays of the sun.

"There is unfortunately a widespread misunderstanding that dark glasses are sufficient to protect the eye when one looks directly at the sun," according to Dr. William W. Bolton, associate director, Department of Health Education, American Medical Association.

Writing in the July issue of Today's Health, published by the A.M.A., Dr. Bolton said after each eclipse of the sun "a certain number of persons are observed to have permanent damage of the retina, with loss of central vision, even after using smoked or dark glasses."

"Even when the sun is partially observed, its rays are still very intense," he said. "Dark glasses only screen against reflected glare that results as the sun's rays strike the earth.

PLUMP CHILD GROWS FASTER, MATURES EARLIER

A plump child generally grows faster and matures earlier than a slender child, a study showed today.

This conclusion was drawn from a study of 259 Ohio-born boys and girls which was reported in the June Journal of Diseases of Children, published by the American Medical Association.

"Childhood fatness results in accelerated growth and advanced maturation in both sexes," according to Stanley M. Garn, Ph.D., and Joan A. Haskell, B.A., Fels Research Institute, Yellow Springs, Ohio.

"Though body size in childhood is obviously determined by many variables, among them parental stature, accumulated fat is clearly related to size superiority during the growing period. It is not unreasonable to conclude, therefore, that an excess of calories is growth-accelerating, with the degree of acceleration related to the energy surplus."

Between the ages of one-and-a-half and 12-and-a-half, children above the average in fat were advanced in height by approximately half a year's growth, the study showed.

The relationship between fatness and body size was more marked among girls, the authors said, perhaps because of a wider range of fatness found in the female.

Referring to chubby children, they said "their developmental acceleration carried them to earlier puberty, on the average, and to earlier cessation of linear growth."

Increased fat storage is associated with advanced body development during prepuberty and early puberty, they added.

The two researchers said they undertook the study because of current interest in overnutrition or supernutrition, repeated reports that more and more American children are obese, and the lack of data on children who are only moderately fat.

The youngesters studied ranged from one-and-a-half to 17-and-a-half years of age and were not selected on the basis of fatness.

BEE STINGS MORE DEADLY THAN SNAKE BITES

More Americans will die this year from insect stings than from snake bites, an article in the July Today's Health magazine said.

"Each year, more Americans die from the stings of the little insects buzzing in our gardens and parks than from bites of all venomous reptiles combined," according to the magazine published by the American Medical Association.

"Most medical authorities are convinced that severe reactions to insect stings are the result of an allergy," the article said.

No one knows exactly how many persons are allergic to the stings of insects, but in the opinion of one allergist "severe reactions to insect stings occur more commonly than is generally supposed."

"In fact, it is possible that unrecognized cases account for some of the sudden deaths attributed to heart failure and heat prostration in the insect season," Dr. Harry L. Mueller of Boston said.

The insects that cause most of the reactions are the honeybee and bumblebee and three kinds of wasps—yellow jacket, hornet, and Polistes—although about 25 other insects have been reported to produce allergic symptoms in man.

Because their nests are hidden and they are easily irritated, yellow jackets account for most of the insect stings. Honeybees and bumblebees are much less likely to sting.

A knowledge of the nature of bees and wasps can be of help in avoiding stings, the article said, making these points:

—If you see more than two yellow jackets or bumblebees disappear under leaves in a woods, it is likely that their nest is located there. Bees and wasps usually sting only when their nests are threatened or they are actually touched.

—If you are buzzed by a bee or wasp, never flail at it with your arms. Walk slowly away. Stinging insects are more apt to attack a fast-moving object because they are sensitive to air

movements and sudden motion.

—Bees seem to be angered by dark shades, whereas white or khaki clothing does not bother them.

—To keep yellow jackets and bees from gathering at picnic tables, spray the area with a repellent chemical.

—Bees and wasps are attracted by hair oils and perfumes which contain floral odors.

—Finally, be sure that there are no nests of yellow jackets, bees, or other wasps in the immediate area of your house or yard. Killing a nest is a tricky business and a trained exterminator should be hired for the job.

BOOK REVIEWS

Symposium on Glaucoma, New Orleans, 1957; Editor, William B. Clark, M. D., Associate Editor, Joe M. Carmichael, St. Louis, Mosby, 1959, pp. 314. Price $13.50.

This is an excellent compilation of the transactions of the New Orleans Academy of Ophthalmology of 1957 with the lectures and round table discussions well recorded. I found the index of subjects somewhat confusing and at times misleading. However, in all, it is a good recordation of the above mentioned meeting.

HARRY B. COULON, M. D.

Minor Surgery; by Frederick Christopher, 8th edition, edited by: Drs. Ochsner and de Bakey, Philadelphia, Pa., W. B. Saunders, 1959, pp. 539. Price $10.50.

This is an excellent surgical treatise. It is a particularly good reference book and will find a valuable place in the office, in the emergency room, and in surgical clinic.

As the authors point out in the preface, the title "Minor Surgery" is inadequate. Many conditions are discussed in detail which are definitely not minor. The true value of the book may be overlooked as a result of the title.

The primary purpose of this publication is to discuss those surgical conditions which are diagnosed and treated in the physician's office, in the out-patient department of the hospital or in the patient's home. An effort is made not to discuss those surgical illnesses that need immediate hospitalization for diagnosis or therapy.

Chapters on the various conditions are written by 24 distinguished surgeons. All of these are well written and the material is clearly presented. The book is divided into 8 sections.

The first section deals with general considerations in the office and out-patient practice of surgery. It includes chapters on surgical equipment, surgical considerations, dressings and bandages, anesthesia, resuscitation, physical treatment in minor surgery and the training of a surgical resident.

The second part discusses conditions of the skin and subcutaneous tissues. In this section are described various anomalies, tumors, mechanical injuries, infections, and injuries. Also in this section, diseases of the breast, with special emphasis on physical examination are included.

The third part includes the musculo-skeletal system. The three chapters in this section discuss deformities and anomalies, injuries in general, and particularly injuries of the hand. This last chapter on the hand is outstanding.

The fourth part discusses diseases of the alimentary tract. Various chapters deal with diseases of the bowel and proctological problems.

The fifth section deals with peripheral vascular diseases. Herein are included arterial diseases of the veins and lymphatics and tumors of blood and lymph vessels.

In the sixth part the genitourinary system is discussed in two parts—male and female.

The seventh part discusses surgical conditions of the eye, ear, nose, and throat.

The last and eighth part of the book deals with the nervous system. Emphasis here is placed on common conditions which present themselves in the office and in the emergency room.

In spite of the fact that the title "Minor Surgery" (as the authors admit) is not truly descriptive, the book itself is extremely worthwhile as a reference text for both the practitioner and the student.

M. L. MICHEL, M. D.

A Traveler's Guide to Good Health; by Colter Rule, M. D., Garden City, N. Y., Doubleday and Company, Inc., 1960, pp. 266. Price $3.95.

This is a book which may be confidently recommended by a physician to any of his patients who are interested in traveling abroad. It gives common sense advice for the various minor ailments which may arise. Specific details are given for preparation of the traveler's medical kit. Suggestions are offered for method of ap-

proaching food and drink. A lengthy chapter gives the why and wherefore of prophylactic immunization. The book concludes with a glossary of medical terms and phrases in French, German, Italian and Spanish. The book lives up to its name.

V. J. DERBES, M. D.

Textbook of Pediatrics; by W. E. Nelson, 7th edition, Philadelphia, Pa., W. B. Saunders, 1959, pp. 1462. Price $16.50.

This seventh edition of one of the two "Pediatric classics" has been entirely redone from the list of contributors to the index—which, incidentally, has the quite humorous topic of "Birds, for the—Pg. 1-1413" which is the entire length of the book. It is, however, not "for the birds" and this edition is remarkably up to date. Several of the "historical" contributors have been replaced by newer men in the respective fields, and this has brought about excellent changes in the chapters covering Endocrinology, Metabolism, Biochemical Problems, Genetics and Orthopedic Problems in Children. All of these are quite good; the section in Hematology is well done as is the section discussing the Growth and Development of the normal infant. All of the bizarre syndromes met in Pediatrics are inserted into one area or another, and an honest attempt has been made to replace all replaceable eponyms.

New sections deal with Tropical Medicine problems, probably a necessity because of the changes in travel. These are not up to the caliber of some of the other sections. Anesthesia is covered, but here again, the problems as related to children do not receive the necessary emphasis. Other chapters that display weakness are those concerned with Parenteral Fluid Therapy (a textbook in itself), Prematurity, Cardiovascular Diseases, and Respiratory Problems. In each of these there are some excellent contributors that cover their assigned ground well; however, other areas are avoided or poorly discussed. It should be emphasized that there is still more than adequate information in these chapters.

The book remains a reference text, not a summary; as such, it does the job for which it is intended. At this time it is superior to the present edition of the other "classic"—Holt.

W. G. THURMAN, M. D.

Atlas of Anatomy and Surgical Approaches in Orthopedic Surgery in the Upper Extremity; by Rudolfo Constantino, Springfield, Illinois, Charles C Thomas, 1960, pp. 102. Price $10.50.

Dr. Constantino's volume is an exceptionally excellent addition to our anatomical and surgical armamentarium. An excellent anatomical dissection is produced first, with the actual anatomical specimen and its related anatomy, in such a manner that an exceptionally wide exposure is made such as normally is not seen in an operative procedure, and yet presents all the problems involved with the surrounding structures. Immediately following this is a section on the surgical approaches and how it would appear as one would surgically approach an area. I think this unique combination of one following the other with very little description and a good deal of anatomical detail is exceptionally helpful to the advanced resident in orthopedics as well as the practicing orthopedist.

I do not feel, of course, that other than the description of the anatomy and some of the standard approaches, that this book would be very favorably received by the first or second year resident in orthopedics or, of course, any medical student. It is obvious that the anatomy is being dissected and presented only for the interest of a restricted field of orthopedists or surgeons who are interested in this type of operative work, who want a quick, pertinent and yet very comprehensive review of the anatomy involved prior to an operative procedure in which perhaps an unusual approach is being considered.

Actually, my only criticism of the book is that had the author taken the time to add a little more concerning the surgical approaches to the proximal third of the forearm, this book would have reached and been useful to a wider group of individuals. In reading the introduction it appears that this was not necessarily the feeling of the author. I therefore feel in the main, that this is an exceptionally excellent book and should be in the library of all orthopedists or surgeons who are interested in the anatomy as well as the surgical approaches to the extremities.

H. R. SOBOLOFF, M. D.

Observations on Direct Analysis; The Therapeutic Technique; by Morris W. Brody, M. D., New York, N. Y., Vantage Press, Inc., 1959, pp. 104. Price $2.95.

Dr. Brody has made a valuable contribution to the Psychiatry Literature. Rosen's technique of direct analysis has had an influence in psychiatry much greater than is usual from so few publications by a single author.

Rosen's papers do not present a systematic formulation of the theoretical framework upon which his techniques are based, nor has there been a careful study of his complete works by many authors who have been critical.

Brody's comments are critical, but sympathetic and do point out certain significant facts as seen by an observer who appears relatively unbiased. It is unfortunate that the value of the contribution is diminished by the author's introduction of a contradictory theoretical explanation of some of the events that went on in the sessions without sufficient data to confirm his own explanations. In description of the interchange

between Rosen, the patient, and the group, he remains on firmer ground.

It would have been of more value if the author in quoting from the book *Direct Analysis* had informed us whether or not Rosen still holds to these particular ideas. This is a particularly important question because Rosen modified his own ideas about a number of different points between the time of publication of his earlier and later papers.

This book is of interest to all psychiatrists. It should be read by all psychiatric residents not only for the material presented, but as an example of an excellent critical analysis.

CHARLES WATKINS, M. D.

The Emergency Syndromes in Pediatric Practice; by Alfred J. Vignec, New York, Landsberger Medical Books, Inc., 1959, pp. 382. Price $9.00.

This book will be nostalgic for the reader who got his education in the pre-atomic era. The author employs the essay style that carries the picture of the wise and experienced clinician, standing at the crib side, lecturing the house staff. He wanders off the subject now and then. He digresses for the recollection of a similar case he once saw. He nods in the direction of statistics with the notation that he has seen only one similar case in the last 25 years. He goes into detail on a point familiar to the young men, who try not to shuffle their feet. He indicates that certain things should be done, but does not elaborate—leaving them to wonder just how. In short, it is pleasant reading. But it is not a succinct, factual synthesis of diagnostic or therapeutic approaches. It will be a disappointment for anyone, vexed by a problem, who turns to it for help.

X-rays are used to illustrate the text—they are so poorly reproduced as to be almost illegible.

NORMAN C. WOODY, M. D.

First Aid, Diagnosis and Management; by Warren H. Cole, and C. R. Puestow, 5th edition, New York, N. Y., Appleton-Century-Crofts, 1960, pp. 420. Price $6.25.

The eighteen years which have elapsed since the first edition of this book have seen marked changes in the philosophy of first aid. The findings during World War II and the Korean War have broadened knowledge and deepened insights.

The primary theme of this new edition is the management of mass casualties in a future war. The kinds of casualties, both military and civilian, would be much greater both in degree and number.

Although not intended primarily for physicians this book could be read with profit by medical students before or during their first year in medical school, and by physicians who wish to brush up on first aid.

Even though the text is dogmatic in specific instances it is clear and precise, and at the same time emphasizes careful examination and thoughtful treatment. It warns again that a "little knowledge is a dangerous thing". Nevertheless, we would be well advised to prepare seriously for the large numbers of first aid workers who would be needed in the event of an atomic holocaust.

There are a few inconsistencies in the text. Mercuric chloride is listed in the first aid kit requirements and on the next page it is stated that mercuric chloride is not useful in first aid work. On page 163 it is stated that 400 r is fatal to 50% and on page 165 that 400 r is fatal to 20% so irradiated.

The text is written by several contributors which may account for its somewhat repetitious style.

The men at the University of Illinois may be complimented on producing a very useful book which is written in an easy to read manner and printed on non-glare paper.

WM. S. RICHARDS, M. D.

Drugs of Choice, 1960/61, 2d.ed., by Walter D. Modell, St. Louis, Mo., C. V. Mosby, 1960, pp. 958. Price $13.50.

The second edition of "Drugs of Choice", edited by Dr. Modell serves as an excellent up-to-date text in Clinical Pharmacology. The 46 contributors (in main, clinicians) are among the foremost in their respective fields of therapeutic application of the drugs discussed.

Pharmacologic consideration preceding the therapeutic application of drugs discussed makes for a rational therapeutic approach. A very useful and complete drug index including trade names is noted in the appendix of the text.

The text should serve a useful purpose for all who wish an unbiased discussion leading to a choice of the old and new drugs.

NORMAN S. GILBERT, M. D.

PUBLICATIONS RECEIVED

Appleton-Century-Crofts, Inc., N. Y.: Practical Clinical Management of Electrolyte Disorders, by William J. Grace.

Doubleday & Co., Inc., N. Y.: Rudolph Matas, A Biography, by Isidore Cohn, M. D., with Hermann B. Deutsch; Your Child's Care, by Harry R. Litchfield, M. D., and Leon H. Dembo, M. D.

W. B. Saunders Co., Phila.: Diseases of the Newborn, by Alexander J. Schaffer, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Practical Neurological Diagnosis, by R. Glen Spurling, M. D. (6th edit.).

The Williams and Wilkins Co., Balt.: French's Index of Differential Diagnosis, edited by Arthur H. Douthwaite, M. D. (8th edit.).

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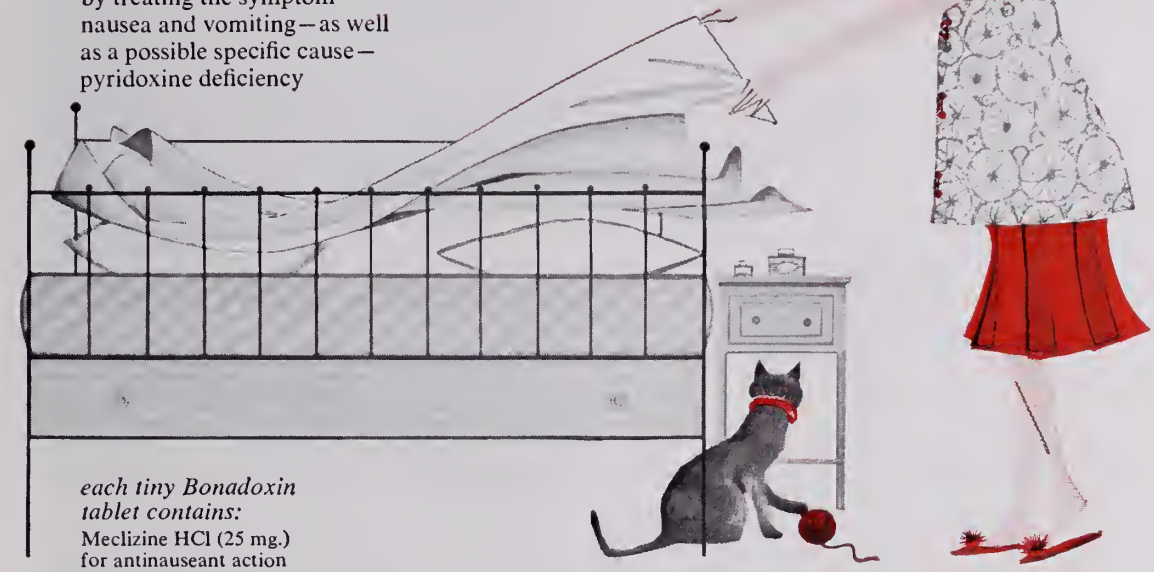
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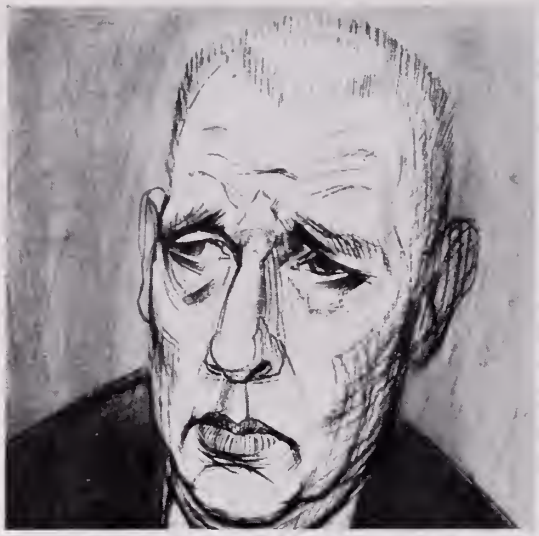
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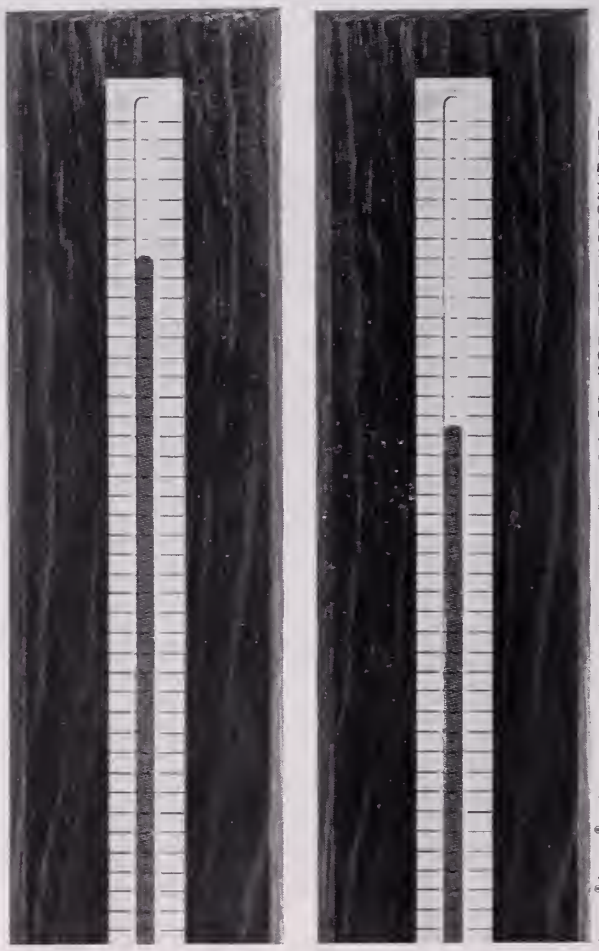
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References: 1. Reports to the Squibb Institute, 1960. 2. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 3. Stenberg, E. S., Jr.; Benedetti, A., and Forsham, P. H.: Op. cit. 5:46 (Feb.) 1960. 4. Fuchs, M.; Moyer, J. H., and Newman, B. E.: Op. cit. 5:55 (Feb.) 1960. 5. Marriott, H. J. L., and Schamroth, L.: Op. cit. 5:14 (Feb.) 1960. 6. Ira, G. H., Jr.; Shaw, O. M., and Bogdonoff, M. O.: North Carolina M. J. 21:19 (Jan.) 1960. 7. Cohen, B. M.: M. Times, to be published. 8. Breneman, G. M. and Keyes, J. W.: Henry Ford Hosp. M. Bull. 7:281 (Dec.) 1959. 9. Forsham, P. H.: Squibb Clin. Res. Notes 2:5 (Dec.) 1959. 10. Larson, E.: Op. cit. 2:10 (Dec.) 1959. 11. Kirkendall, W. M.: Op. cit. 2:11 (Dec.) 1959. 12. Yu, P. N.: Op. cit. 2:12 (Dec.) 1959. 13. Weiss, S.; Weiss, J., and Weiss, B.: Op. cit. 2:13 (Dec.) 1959. 14. Moser, M.: Op. cit. 2:13 (Dec.) 1959. 15. Kahn, A., and Grenblatt, I. J.: Op. cit. 2:15 (Dec.) 1959. 16. Grollman, A.: Monographs on Therapy 5:1 (Feb.) 1960.

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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Source: Harrison, T. R., *et al.:* Principles of Internal Medicine, ed. 3, New York, McGraw-Hill Book Co., 1958, p. 620

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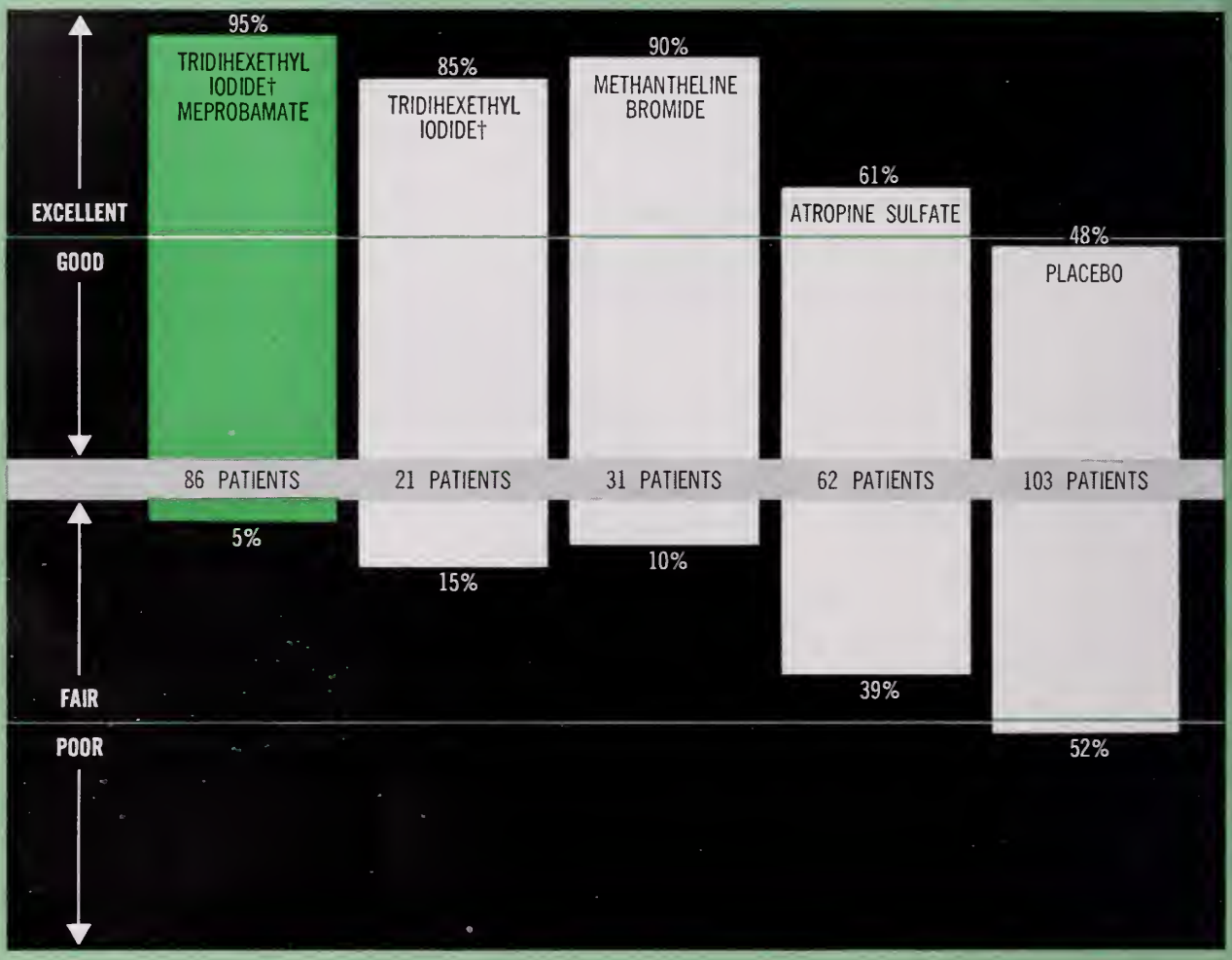
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PATHIBAMATE-400 Tablets: 400 mg. of meprobamate; 25 mg. of PATHILON

Dosage: Average oral adult dose is 1 tablet t.i.d. at mealtime and 2 tablets at bedtime.

Pathibamate® 400 200

meprobamate with PATHILON® tridihexethyl chloride Lederle

clinically proven safety

The efficacy of **PATHIBAMATE** has been confirmed clinically in **duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis** with gastrointestinal symptoms, and **gastric hypermotility.**

Pictured are the results obtained with the PATHILON (tridihexethyl iodide)–meprobamate combination† in a double-blind study of 303 ulcer patients, extending over a period of 36 months.* They clearly demonstrate the efficacy of **PATHIBAMATE** in controlling the symptoms.

SIDE EFFECTS	TRIDIHEXETHYL IODIDE† MEPROBAMATE	TRIDIHEXETHYL IODIDE†	METHANTHELINE BROMIDE	ATROPINE SULFATE	PLACEBO
DRY MOUTH	1%	5%	72%	46%	5%
STOMATITIS	1%	0%	28%	14%	0%
VISUAL DISTURBANCES	0%	0%	50%	34%	1%
URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	20%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
RECURRENCES					
NONE	28%	23%	25%	17%	26%
FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. **Am. J. Digest. Dis.** 4:1055 (Dec.) 1959.

†PATHILON is now supplied as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could distort the results of certain thyroid function tests.

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

control the tension — treat the trauma

Q. *When you want to reduce serum cholesterol and maintain it at a low level, is medication more realistic than dietary modifications?*

a. *Maintenance of lowered cholesterol concentration in the blood is a life-long problem. It is usually preferable, therefore, to try to obtain the desired results through simple dietary modification. This spares the patient added expense and permits him meals he will relish.*



The modification is based on a diet to maintain optimum weight plus a judicious substitution of the poly-unsaturated oils for the saturated fats. One very simple part of the change is to cook the selected foods with poly-unsaturated Wesson. In the prescribed diet, this switch in type of fat will help to lower blood serum cholesterol and help maintain it at low levels. The use of Wesson permits a diet planned around many favorite and popular foods. Thus the patient finds it a pleasant, easy matter to adhere to the prescribed course.

Where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen, Wesson is unsurpassed by any readily available brand.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50% . Only the lightest cottonseed oils of highest iodine number are selected for Wesson. No significant variations are permitted in the 22 exacting specifications required before bottling.

Wesson satisfies the most exacting appetites. To be effective, a diet must be *eaten* by the patient. The majority of housewives prefer Wesson particularly by the criteria of odor, flavor (blandness) and lightness of color. (Substantiated by sales leadership for 59 years and reconfirmed by recent tests against the next leading brand with brand identification removed, among a national probability sample.)

Chicken, grilled with homemade Wesson barbecue sauce, is low in saturated fat—and delicious eating. It gives longer lasting satisfaction.



FREE *Wesson recipes, available in quantity for your patients, show how to prepare meats, seafoods, vegetables, salads and desserts with poly-unsaturated vegetable oil. Request quantity needed from The Wesson People, Dept. N., 210 Baronne St., New Orleans 12, La.*

Wesson's Important Constituents

Wessan is 100% cattanseed ail . . . winterized and of selected quality

Linoleic acid glycerides (paly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytasterol (predaminantly beta sitasteral)	0.3-0.5%
Total tocopherals	0.09-0.12%

Never hydragenated—completely salt free



Of special significance to the physician is the symbol

When he sees it engraved on a Tablet of Quinidine Sulfate he has the assurance that the Quinidine Sulfate is produced from Cinchona Bark, is alkaloidally standardized, and therefore of unvarying activity and quality.

When the physician writes "DR" (Davies, Rose) on his prescriptions for Tablets Quinidine Sulfate, he is assured that this "quality" tablet is dispensed to his patient.

Rx Tablets Quinidine Sulfate Natural
0.2 Gram (or 3 grains)
Davies, Rose

Clinical samples sent to physicians on request

Davies, Rose & Company, Limited
Boston 18, Mass.

Q-7

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Psychiatrist-in-Chief
American Board Certified
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A limited number of custodial cases accepted

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"The Hospital Atmosphere is Avoided"

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FULL TIME DOCTOR NEEDED

Small hospital (Caldwell Hospital & Clinic, Columbia, Louisiana) 18 beds. Well equipped for all medical, surgery and obstetrical cases. A full time associate is needed beginning October 1, 1960. If interested, call the undersigned collect.

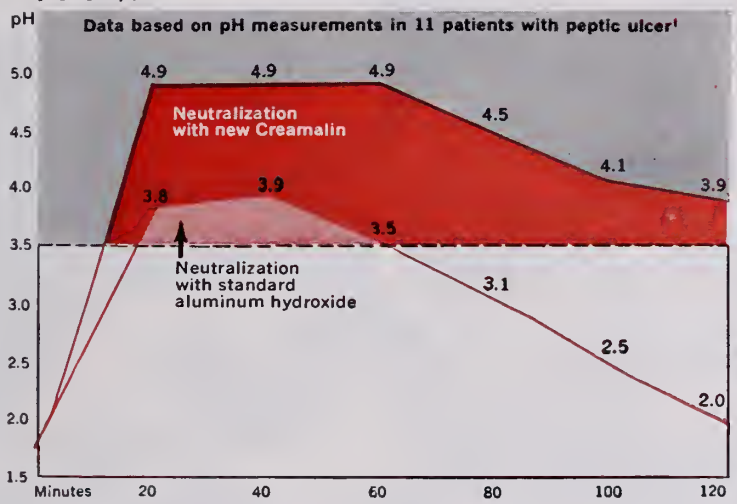
E. L. CARROLL, M. D.

Office phone	2611
Hospital phone	2661
Res. phone	2413

At the site of peptic ulcer



Following determination of basal secretion, intragastric pH was continuously determined by means of frequent readings over a two-hour period.



neutralization is much faster and twice as long with

New CREAMALIN® ANTACID TABLETS

New proof in vivo[1] of the much greater efficacy of new Creamalin tablets over standard aluminum hydroxide has now been obtained. Results of comparative tests on patients with peptic ulcer, measured by an intragastric pH electrode, show that new Creamalin neutralizes acid from 40 to 65 per cent faster than the standard preparation. This neutralization (pH 3.5 or above) is maintained for approximately one hour longer.

New Creamalin provides virtually the same effects as a liquid antacid[2] with the convenience of a tablet.

Nonconstipating and pleasant-tasting, new Creamalin antacid tablets will not produce "acid rebound" or alkalosis.

Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive, short polymer dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles of the powder offer a vastly increased surface area for quicker and more complete acid neutralization.

Dosage: Gastric hyperacidity — from 2 to 4 tablets as necessary. Peptic ulcer or gastritis — from 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth. **How supplied:** Bottles of 50, 100, 200 and 1000.

1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

Winthrop LABORATORIES
New York 18, N. Y.

for peptic ulcer ■gastritis ■gastric hyperacidity



Nutritious dishes—oysters, cottage cheese salad with peanuts and dried fruits, cole slaw, orange juice, custard—and beer

The secret of a successful high-vitamin, high-mineral diet is acceptance

The more appetizing the diet, the more likely your patient will stick to it. Dried apricots and figs with cottage cheese and peanuts attractively provides calcium, iron, vitamins A, B_2, niacin and C. Oysters, rich in iron and calcium, supply vitamins A and D.

Shredded cabbage and carrot slaw combines vitamins A and C and calcium. Oatmeal ranks high in iron and gets a generous calcium and vitamin B_6 bonus when served with molasses and milk. Custard contains calcium and vitamins A, B_1, B_2. A topping of orange juice concentrate adds vitamin C.



With your approval, beer can add zest to your patient's diet.

An 8-oz. glass of beer contains 10 mg. calcium, 50 mg. phosphorus, ⅛ min. daily requirement of niacin, smaller amounts of other B-complex vitamins. (Average of American beers)

United States Brewers Foundation

If you'd like reprints of this and 11 other different diet menus for your patients, write United States Brewers Foundation, 535 Fifth Avenue, N.Y. 17, N.Y.



Diagnostic Quandaries

Colitis? Gall Bladder Disease?
Chronic Appendicitis?
Rheumatoid Arthritis? Regional Enteritis?

A DISEASE that is frequently overlooked in solving diagnostic quandaries is amebiasis. Its symptoms are varied and contradictory, and diagnosis is extremely difficult. In one study, 56% of the cases would have been overlooked if the routine three stool specimens had been relied on.[1]

Another study found 96% of a group of 150 patients with rheumatoid arthritis were infected by *E. histolytica*. In 15 of these subjects, nine stool specimens were required to establish the diagnosis.[2]

Webster discovered amebic infection in 147 cases with prior diagnoses of spastic colon, psychoneurosis, gall bladder disease, nervous indigestion, chronic appendicitis, and other diseases. Duration of symptoms varied from one week to over 30 years. In some cases, it took as many as six stool specimens to establish the diagnosis of amebiasis.[3]

Now treatment with Glarubin provides a means of differential diagnosis in suspected cases of amebiasis. Glarubin, a crystalline glycoside obtained from the fruit of *Simarouba glauca*, is a safe, effective amebicide. It contains no arsenic, bismuth, or iodine. Its virtual freedom from toxicity makes it practical to treat suspected cases without undertaking difficult, and frequently undependable, stool analyses. Marked improvement following administration of Glarubin indicates pathologically significant amebic infection.

Glarubin is administered orally in tablet form and does not require strict medical supervision or hospitalization. Extensive clinical trials prove it highly effective in intestinal amebiasis.

Glarubin*

TABLETS

specific for intestinal amebiasis

Supplied in bottles of 40 tablets, each tablet containing 50 mg. of glaucarubin.

Write for descriptive literature, bibliography, and dosage schedules.

1. Cook, J.E., Briggs, G.W., and Hindley, F.W.: Chronic Amebiasis and the Need for a Diagnostic Profile, Am. Pract. and Dig. of Treat. *6*:1821 (Dec., 1955).

2. Rinehart, R.E., and Marcus, H.: Incidence of Amebiasis In Healthy Individuals, Clinic Patients and Those with Rheumatoid Arthritis, Northwest Med., *54*:708 (July, 1955).

3. Webster, B.H.: Amebiasis, a Disease of Multiple Manifestations, Am. Pract. and Dig. of Treat. *9*:897 (June, 1958).

*U.S. Pat. No. 2,864,745

THE S.E. MASSENGILL COMPANY
BRISTOL, TENNESSEE
NEW YORK • KANSAS CITY • SAN FRANCISCO



The basic question is whether we are to discard the system that has brought us to our present level of health care, and promises much higher levels for the future, in favor of a regulatory strait jacket that stifles initiative, bureaucratizes research, and promises nothing for the future.

You can't go places in a strait jacket...!

An editorial writer recently made the interesting suggestion that the pharmaceutical industry might have avoided much of the current public interest in its affairs if they had simply restricted themselves to making aspirin tablets and rubbing alcohol, competing only by debating which aspirin dissolves faster. • No one has seriously suggested a return to the "good old days" in therapeutics, but there are apparently some who would like to destroy the system that has produced for us the finest medical care in the history of the world. Whether they attack the freedom of the patient to choose his physician, the freedom of the physician in the practice of his profession, or the freedom of the pharmaceutical industry is immaterial. • If the desideratum is simply maintenance of the status quo in health care, medicine might well have rested on its 19th century laurels and the pharmaceutical industry on aspirin tablets and rubbing alcohol.

This message is brought to you on behalf of the producers of prescription drugs as a service to the medical profession. For additional information, please write Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D. C.



"be sure to make up more **TRICHOTINE** solution for our examining room."

You can see for yourself the efficient detergent action of Trichotine solution in reducing promptly a cervical plug (using a saturated cotton pledget), or washing away the "cheesy" exudate of monilia.

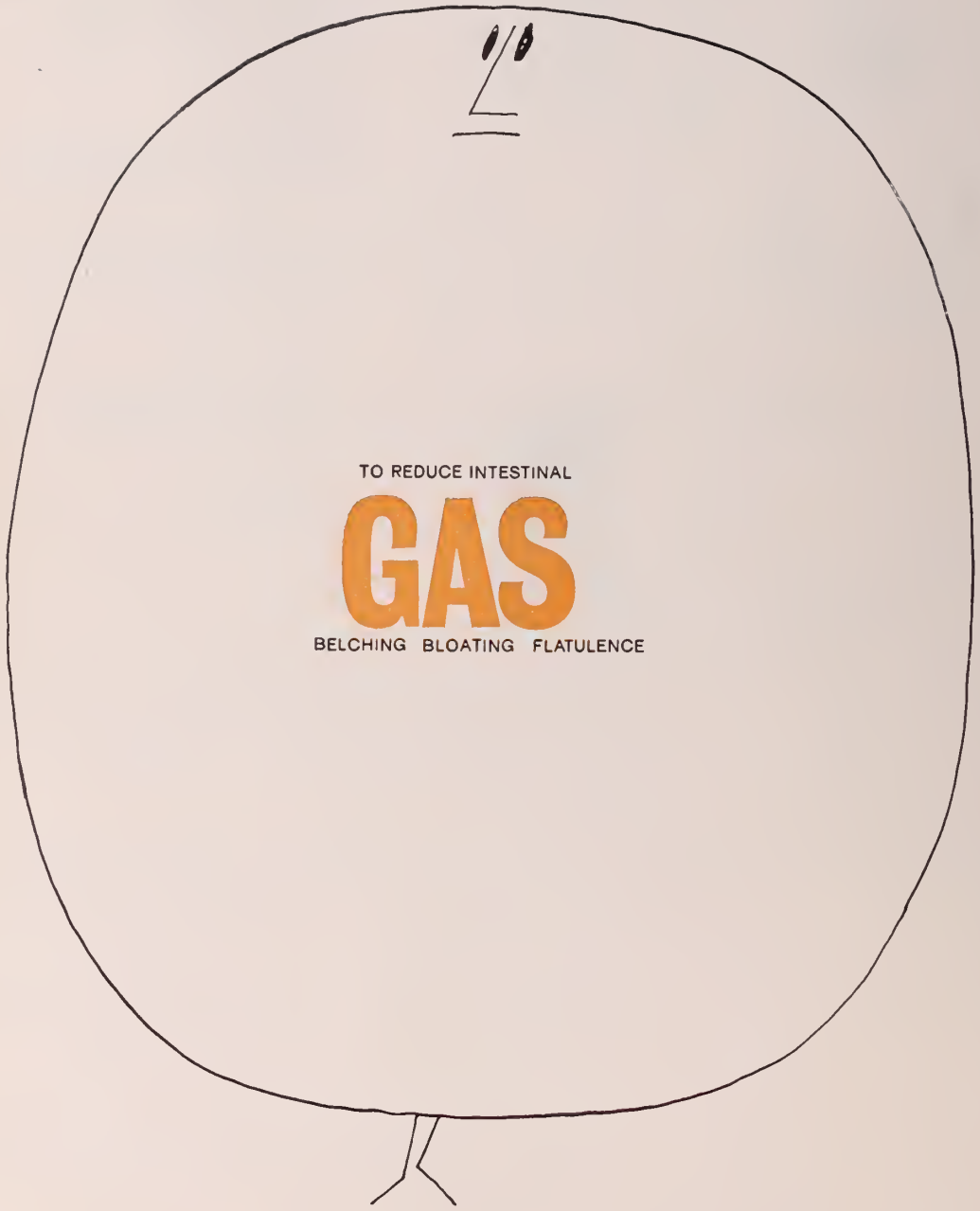
TRICHOTINE is just as effective for therapeutic irrigation by your patient at home

The same qualities — detergency, antisepsis, healing — make Trichotine ideal for the treatment of cervico-vaginitis and leukorrheas, alone or in conjunction with other antimicrobials. In the itching, burning, and foul odor of non-specific vaginitis and leukorrhea the action of Trichotine is immediate and gratifying to the patient.

The more you expect of a douche, the more you will use Trichotine in the office and prescribe it for home irrigation, and recommend it as well for postmenstrual and postcoital hygiene.

The modern detergent douche **TRICHOTINE®**

THE FESLER COMPANY, INC. 375 Fairfield Avenue, Stamford, Conn.



A biochemical compound used to diminish intestinal gas in healthy persons and those patients having digestive disorders ■

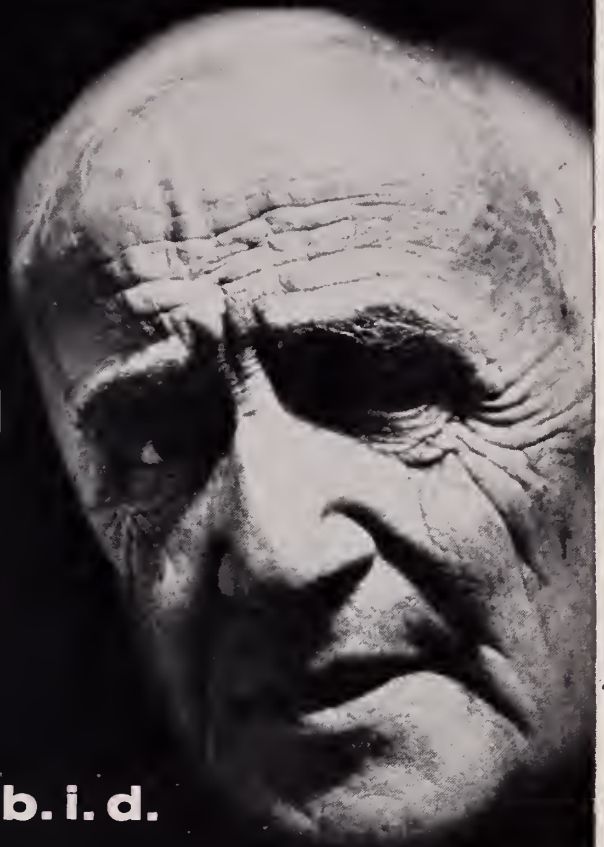
KANULASE

Each Kanulase tablet contains Dorase* 320 units, combined with pepsin, N.F., 150 mg.; glutamic acid HCl, 200 mg.; pancreatin, N.F., 500mg.; oxbile extract, 100 mg. Dosage: 1 or 2 tablets at mealtime. Supplied: Bottles of 50 tablets.

*DORSEY BRAND OF CELLULASE, EXPRESSED AS DIGESTIVE ACTIVITY UNITS

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

IN SENILE CONFUSION . . .



CONTINUOUS CEREBRAL OXYGENATION

WITH

ONE

Geroniazol TT* b.i.d.

- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio


alert tranquillity

a new, improved, more potent relaxant for anxiety and tension

- effective in half the dosage required with meprobamate
- much less drowsiness than with meprobamate, phenothiazines, or the psychosedatives
- does not impair intellect, skilled performance, or normal behavior
- neither depression nor significant toxicity has been reported



alert tranquillity

Striatran®

EMYLCAMATE

- a familiar spectrum of antianxiety and muscle-relaxant activity
- no new or unusual effects—such as ataxia or excessive weight gain
- may be used in full therapeutic dosage even in geriatric or debilitated patients
- no cumulative effect
- simple, uncomplicated dosage, providing a wide margin of safety for office use

STRIATRAN is indicated in anxiety and tension, occurring alone or in association with a variety of clinical conditions.

Adult Dosage: One tablet three times daily, preferably just before meals. In insomnia due to emotional tension, an additional tablet at bedtime usually affords sufficient relaxation to permit natural sleep.

Supply: 200 mg. tablets, coated pink, bottles of 100.

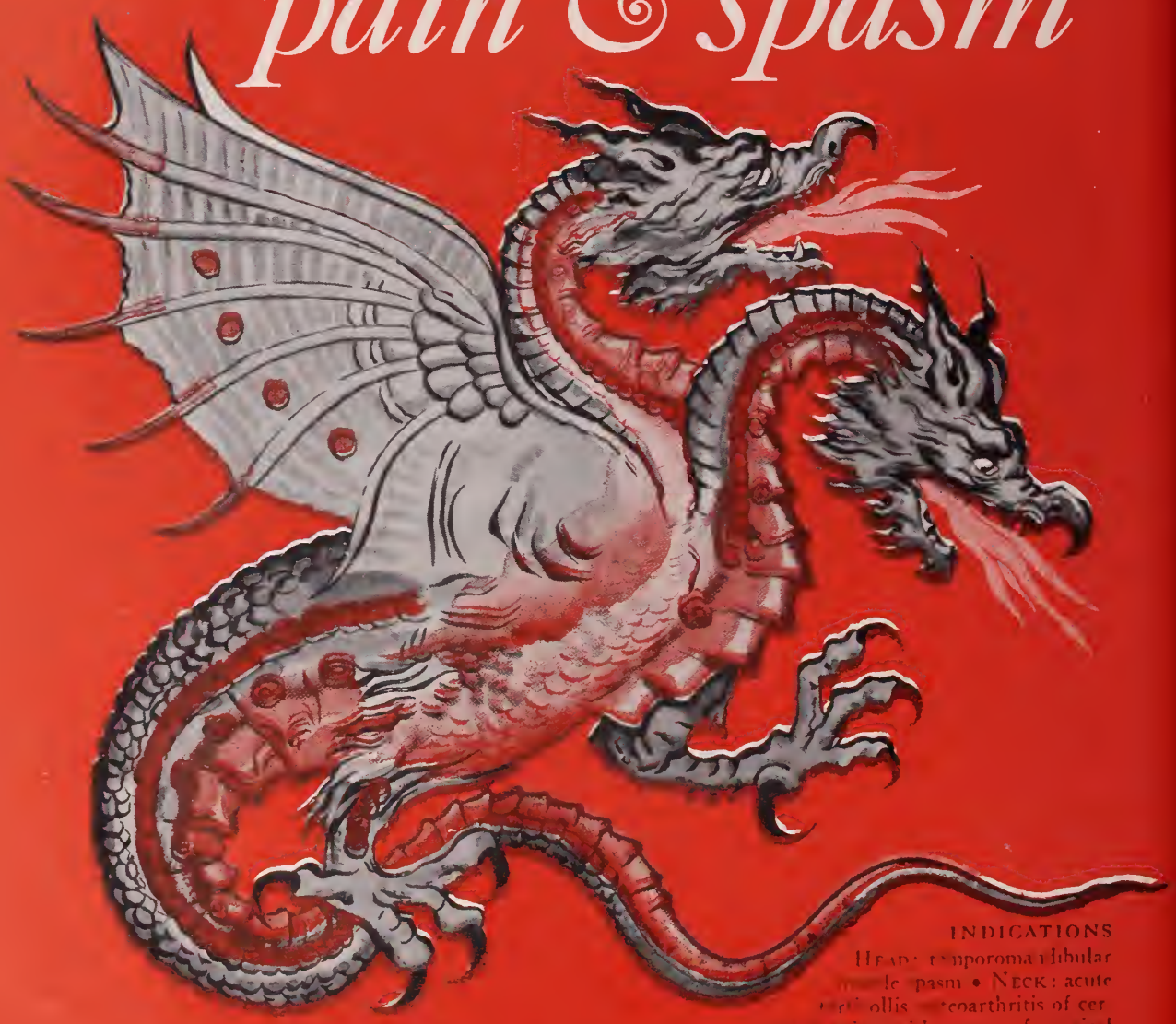
While no absolute contraindications have been found for Striatran in full recommended dosage, the usual precautions and observations for new drugs are advised.

For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., WEST POINT, PA.

STRIATRAN IS A TRADEMARK OF MERCK & CO., INC.

now–for more comprehensive control of *'pain & spasm'*



INDICATIONS

HEAD: temporomandibular [illegible] muscle spasm • NECK: acute [illegible] ollis osteoarthritis of cer[illegible] spine with spasm of cervical [illegible] • BACK: [illegible] syndrome, strained [illegible] arthritis (ankle, foot or knee), [illegible] muscle or muscle group, old fracture [illegible] disease, conditions [illegible] pain and spasm

-pain due to
or associated with
-spasm of skeletal muscle

a new muscle relaxant-analgesic

Robaxisal®

ROBAXIN® WITH ASPIRIN

Many conditions, painful in themselves, often give rise to spasm of skeletal muscles. ROBAXISAL, the new dual-acting muscle relaxant-analgesic, treats both the pain and the spasm with marked success: In clinical studies on 311 patients, 12 investigators[1] reported satisfactory results in 86.5%. Each ROBAXISAL Tablet contains:

- A relaxant component — Robaxin* — widely recognized for its prompt, long-lasting relief of painful skeletal muscle spasm, with unusual freedom from undesired side effects . . . . . 400 mg

*Methocarbamol Robins. U.S. Pat. No. 2770629

- An analgesic component—aspirin—whose pain-relieving effect is markedly enhanced by Robaxin, and which has added value as an anti-inflammatory and anti-rheumatic agent . . . . (5 gr.) 325 mg

INDICATIONS. ROBAXISAL is indicated when analgesic as well as relaxant action is desired in the treatment of skeletal muscle spasm and severe concurrent pain. Typical conditions are disorders of the back, whiplash and other traumatic injuries, myositis, and pain and spasm associated with arthritis.

SUPPLY: ROBAXISAL Tablets (pink-and-white, laminated) in bottles of 100 and 500.

Also available: ROBAXIN Injectable, 1.0 Gm. in 10-cc. ampul. ROBAXIN Tablets, 0.5 Gm. (white, scored) in bottles of 50 and 500.

[1] Clinical reports in files of A. H. Robins Co., Inc., from: J. Allen, Madison, Wisc., B. Billow, New York, N. Y., B. Decker, Richmond, Va., C. Freeman, Jr., Augusta, Ga., R. B. Gordon, New York, N. Y., J. E. Holmblad, Schenectady, N. Y., L. Levy, New York, N. Y., N. LoBue, Oak Park Heights, Ill., H. Nachman, Richmond, Va., A. Poindexter, Los Angeles, Cal., E. Rogers, Brooklyn, N. Y., K. H. Strong, Fairfield, Ia.

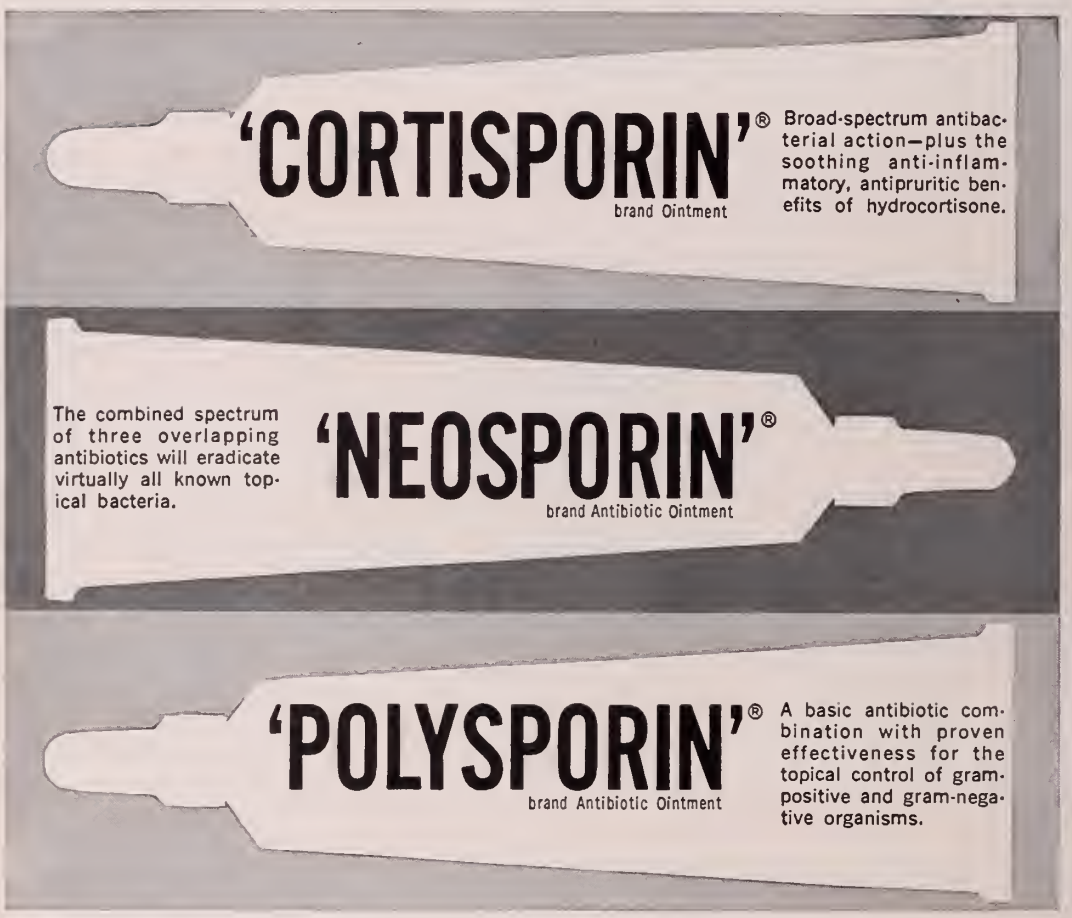
Robins

Additional information available upon request.

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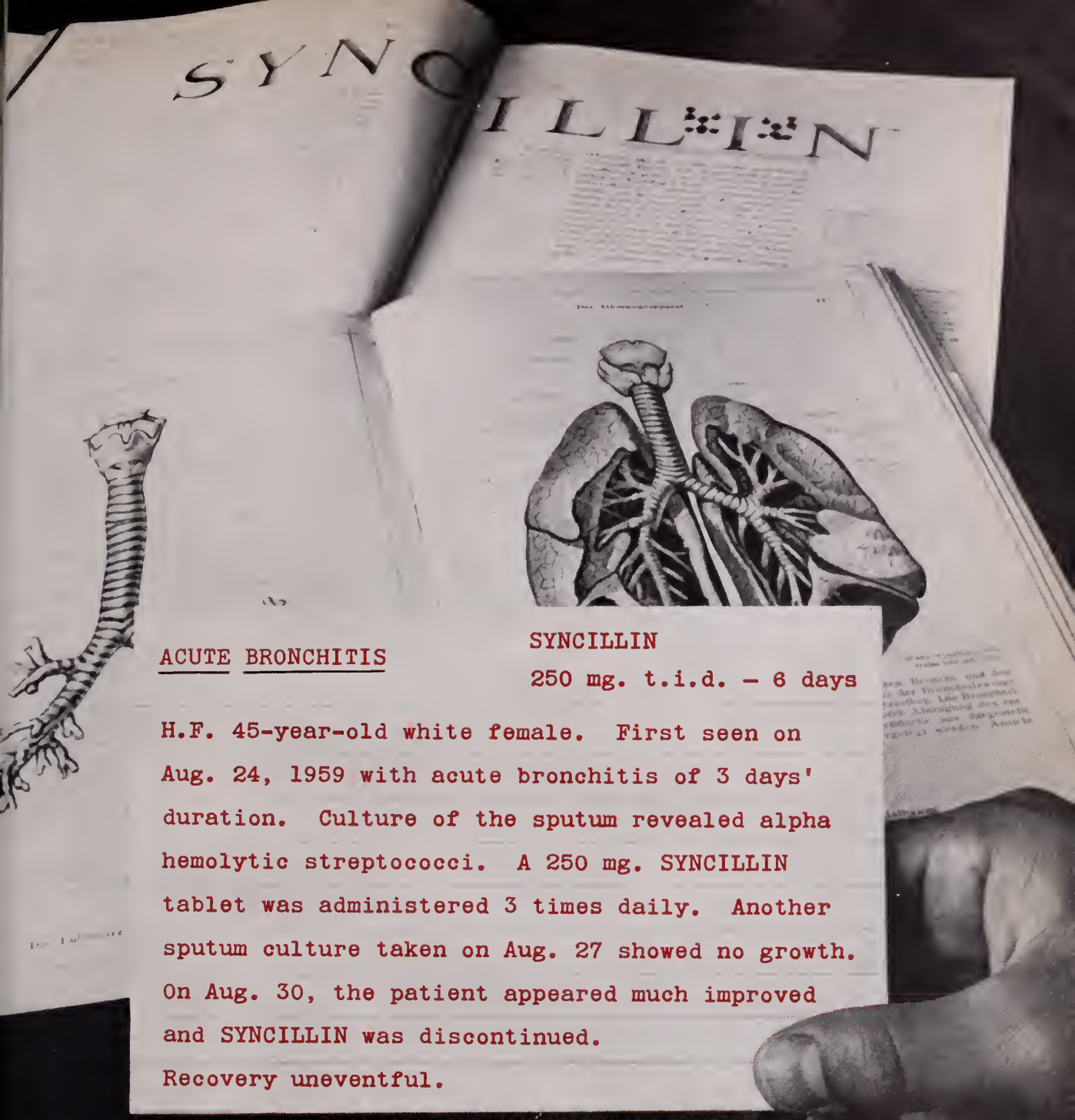
Making today's medicines with integrity . . . seeking tomorrow's with persistence

'B. W. & Co.' 'Sporin' Ointments rarely sensitize . . . give decisive bactericidal action for most every topical indication



Contents per Gm.	'Polysporin'®	'Neosporin'®	'Cortisporin'®
'Aerosporin'® brand Polymyxin B Sulfate	10,000 Units	5,000 Units	5,000 Units
Zinc Bacitracin	500 Units	400 Units	400 Units
Neomycin Sulfate	—	5 mg.	5 mg.
Hydrocortisone	—	—	10 mg.
Supplied:	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of ½ oz. and ⅛ oz. (with ophthalmic tip)

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York



ACUTE BRONCHITIS

SYNCILLIN
250 mg. t.i.d. – 6 days

H.F. 45-year-old white female. First seen on Aug. 24, 1959 with acute bronchitis of 3 days' duration. Culture of the sputum revealed alpha hemolytic streptococci. A 250 mg. SYNCILLIN tablet was administered 3 times daily. Another sputum culture taken on Aug. 27 showed no growth. On Aug. 30, the patient appeared much improved and SYNCILLIN was discontinued. Recovery uneventful.

Actual case summary from the files of Bristol Laboratories' Medical Department

THE ORIGINAL potassium phenethicillin

SYNCILLIN®

(Potassium Penicillin-152)

A dosage form to meet the individual requirements of patients of all ages in home, office, clinic, and hospital:

Syncillin Tablets – 250 mg. (400,000 units)... Syncillin Tablets – 125 mg. (200,000 units)
Syncillin for Oral Solution – 60 ml. bottles – when reconstituted, 125 mg. (200,000 units) per 5 ml.
Syncillin Pediatric Drops – 1.5 Gm. bottles. Calibrated dropper delivers 125 mg. (200,000 units)

Complete information on indications, dosage and precautions is included in the circular accompanying each package.

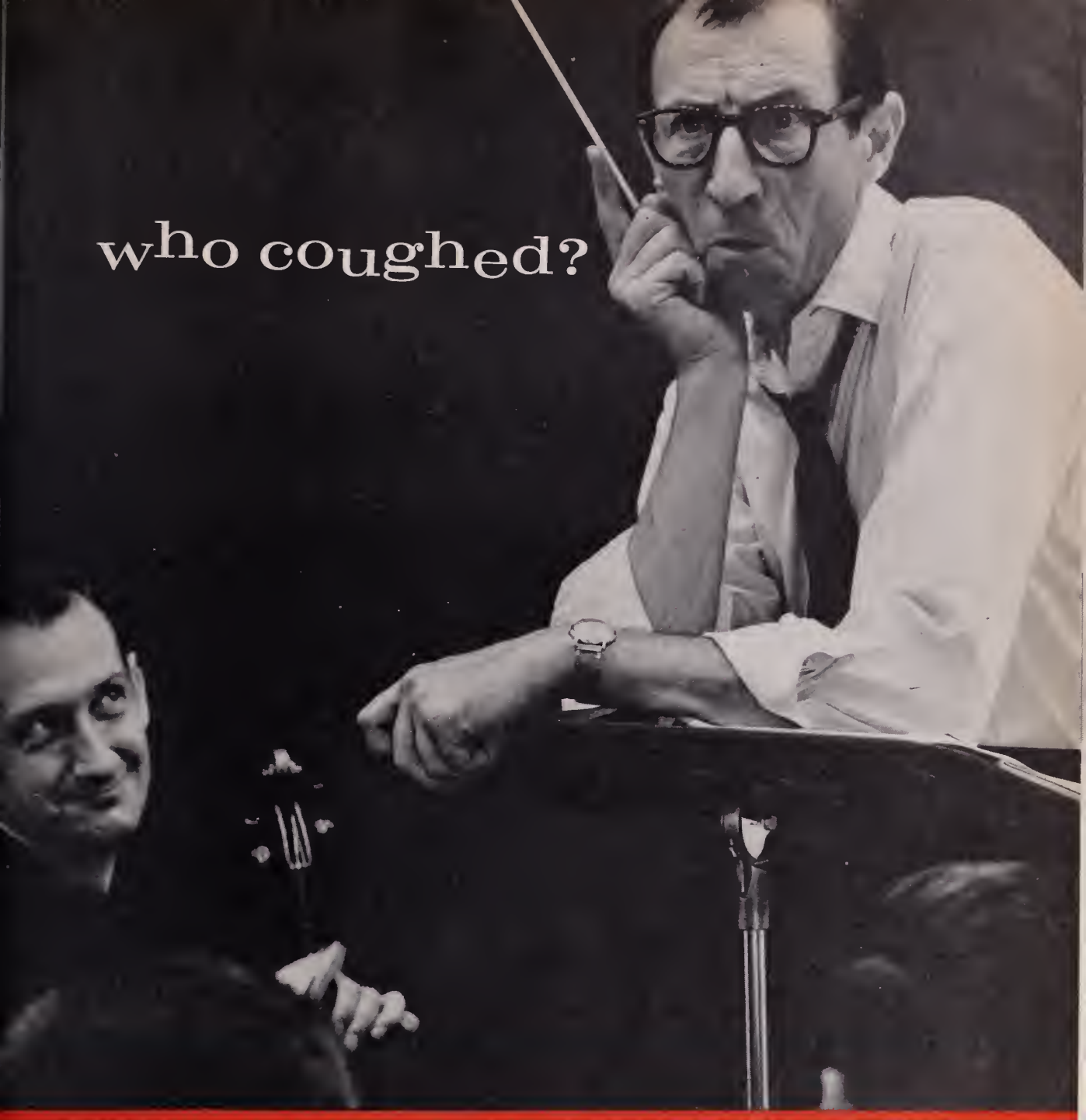
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Just one prescription for Engran Term-Pak (270 tablets)
SQUIBB VITAMIN-MINERAL SUPPLEMENT
calling for just one tablet per day will carry her through term to the six-week postpartum check-up. Thus, you help to assure a nutritionally perfect pregnancy, while providing the convenience and economy of the re-usable Term-Pak. Engran is also available in bottles of 100 tablets.

SQUIBB *Squibb Quality—The Priceless Ingredient*

'ENGRAN'® AND 'TERM-PAK'® ARE SQUIBB TRADEMARKS



WHENEVER COUGH THERAPY IS INDICATED

HYCOMINE®

Syrup

THE COMPLETE Rx FOR COUGH CONTROL

cough sedative | antihistamine
decongestant | expectorant

■ relieves cough and associated symptoms in 15-20 minutes ■ effective for 6 hours or longer ■ promotes expectoration ■ rarely constipates ■ agreeably cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE* Syrup contains:

Hycodan®		
Dihydrocodeinone Bitartrate	5 mg.	6.5 mg.
(Warning: May be habit-forming)		
Homatropine Methylbromide	1.5 mg.	
Pyrilamine Maleate		12.5 mg.
Phenylephrine Hydrochloride		10 mg.
Ammonium Chloride		60 mg.
Sodium Citrate		85 mg.

Average adult dose: One teaspoonful after meals and at bedtime. May be habit-forming. Federal law permits oral prescription.

Endo®

Literature on request

ENDO LABORATORIES
Richmond Hill 18, New York

*U.S. Pat. 2,630,400

wherever there is inflammation, swelling, pain

VARIDASE®

Streptokinase-Streptodornase Lederle

BUCCAL Tablets

conditions for a fast & comfortable comeback

Host reaction to injury or local infection has a catabolic and an anabolic phase. The body responds with inflammation, swelling and pain. In time, the process is reversed. VARIDASE speeds up this normal process of recovery. By activating fibrinolytic factors VARIDASE shortens the *undesirable phase,* limits necrotic changes due to inflammatory infiltration, and initiates the constructive phase to speed total remission. Medication and body defenses can readily penetrate to the affected site; local tissue is prepared for faster regrowth of cells. In infection, the fibrin wall is breached while the infection-limiting effect is retained. In acute cases, response is often dramatic. In chronic cases, VARIDASE Buccal Tablets can stimulate a successful response to primary therapy previously considered inadequate or failing.

for routine use in injury and infection ...new simple buccal route

VARIDASE Buccal Tablets should be retained in the buccal pouch until dissolved. For maximum absorption, patient should delay swallowing saliva.
Dosage: One tablet four times daily usually for five days. When infection is present, VARIDASE Buccal Tablets should be given in conjunction with ACHROMYCIN® V Tetracycline with Citric Acid.
Each VARIDASE Buccal Tablet contains: 10,000 Units Streptokinase and 2,500 Units Streptodornase.
Supplied: boxes of 24 and 100 tablets.

1. Innerfield, I.: Clinical report cited with permission
2. Clinical report cited with permission

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY
Pearl River, New York





FORCE INJURY
severe bruises
. . . swelling
. . . cleared
by fifth day[2]





VARICOSE ULCER
15 years duration
. . . resolved with
VARIDASE[1]





INFLAMMATORY DERMATOSIS
rapidly spreading
rhus dermatitis
healed within
a week[1]





INFECTED LACERATION
marked reversal
in 3 days . . .
returned
to school . . .
osure advanced[1]





THROMBOPHLEBITIS
back on his feet
in a week after
recurrent episode[1]





REFRACTORY CELLULITIS
normal routine
resumed after 4 days
of VARIDASE[1]

OPEN UP THE SINUSES



NEO-VADRIN FOR NASOSINUSITIS

Neo-Vadrin is the deep nasal decongestant that restores drainage and ventilation of all eight sinuses by opening up the obstructed ostia.

The therapeutic effect is both prompt and prolonged. Hence Neo-Vadrin is ideal for treatment of deep nasal and sinus congestion due to head colds, hay fever, vasomotor rhinitis, nasal allergy, and sinusitis.

In addition, Neo-Vadrin is antiseptic and locally anesthetic. May be used by patients of all ages.

dl-Norephedrine HCl	0.4%
Phenylephrine HCl	0.15%
Chlorobutanol	0.15%
Benzalkonium Chloride	0.005%

The more prolonged action of dl-norephedrine [1] combined with promptly effective phenylephrine [2] provides a long span of hours for more satisfactory therapeutic response.

Supplied in 1 fld. oz. dropper bottles with special nasal applicator and 3/4 oz. plastic spray bottles.

Samples are available to physicians upon request. Please make your request on your prescription sheet or letterhead.

[1] **Sollmann's Manual of Pharmacology**, 8th ed., 1957, p. 507.

[2] **Modern Drug Encyclopedia**, 7th ed., 1958, p. 757.

FIRST TEXAS *Pharmaceuticals, Inc.*

Since 1901

DALLAS **ATLANTA**

in common Gram-positive infections due to susceptible organisms

YOU CAN COUNT ON

TAO®

(triacetyloleandomycin)

even in many resistant Staph*



1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, broncho-pneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

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95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

*In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics. **TAO proved 93.4% effective in these 884 cases.**

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DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

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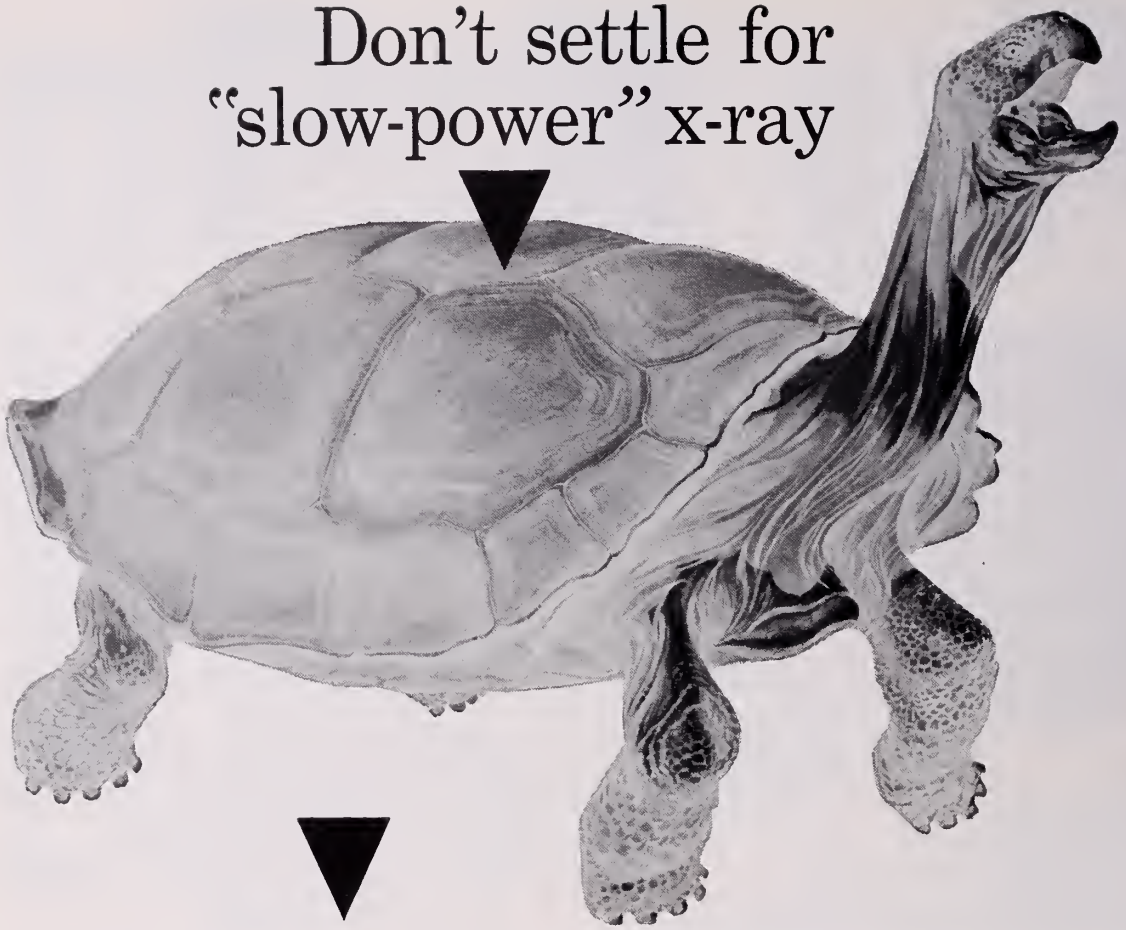
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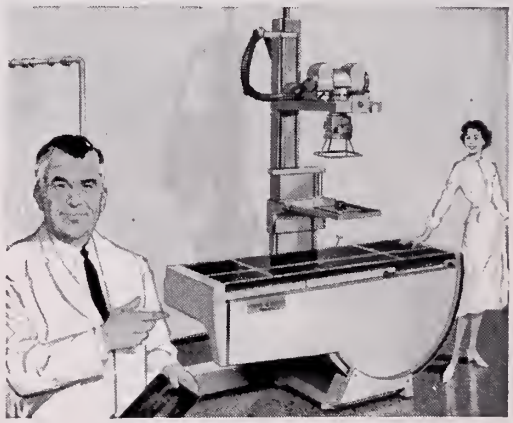
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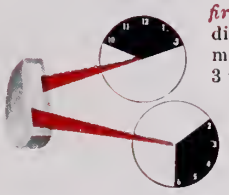
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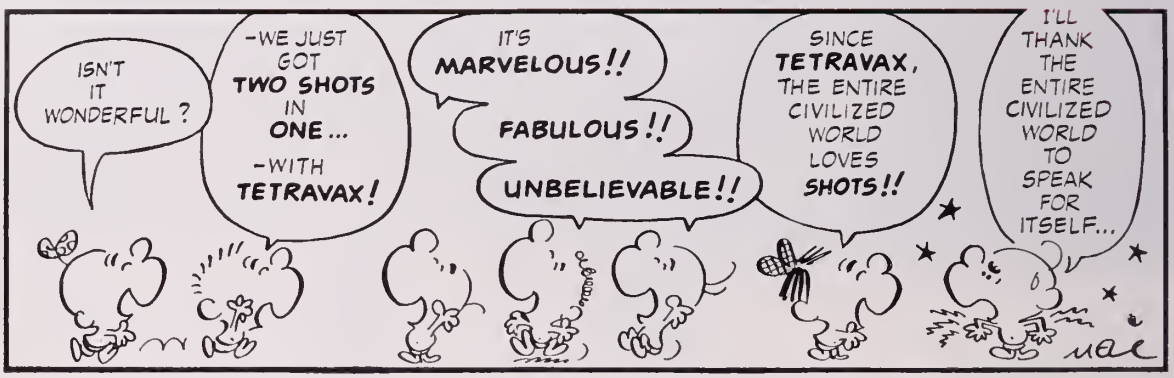
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*MC GOVERN, J. P., MC ELHENNEY, T. R., HALL, T. R., AND BURDON, K.D.: ANNALS OF ALLERGY 17:915, 1959.

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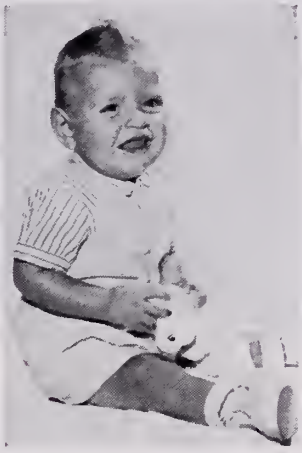
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1. Weissberg, G.: Clin. Med., June 1960.

2. Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

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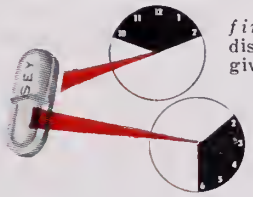
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References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

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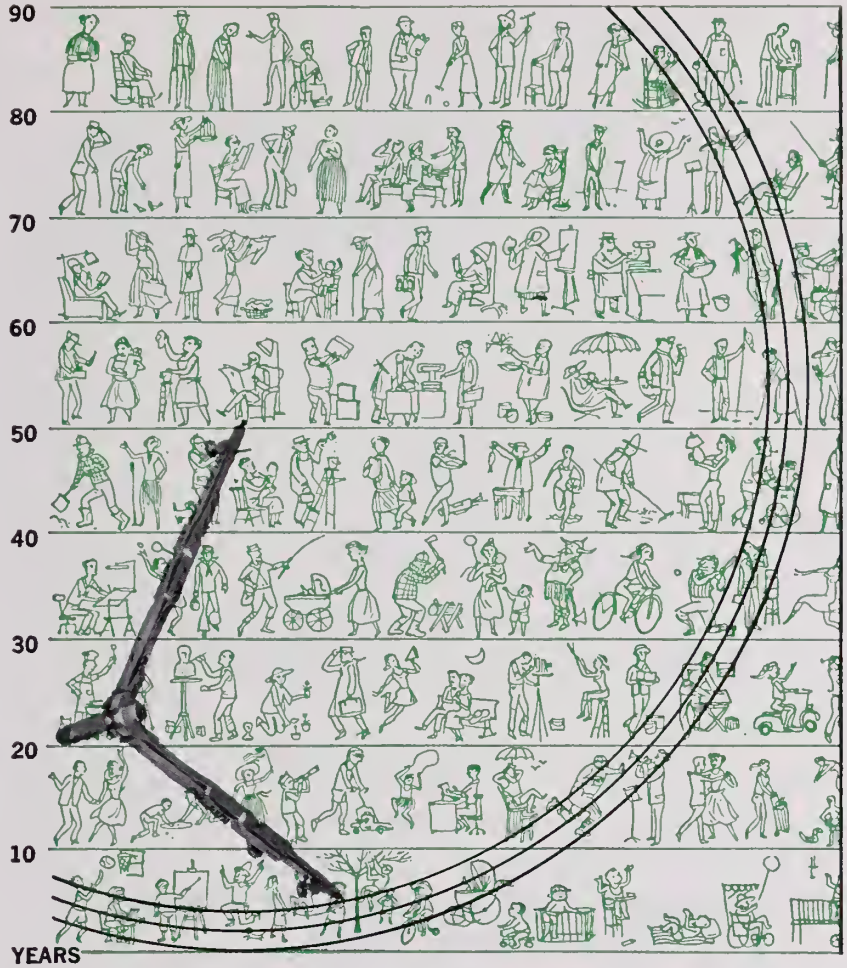
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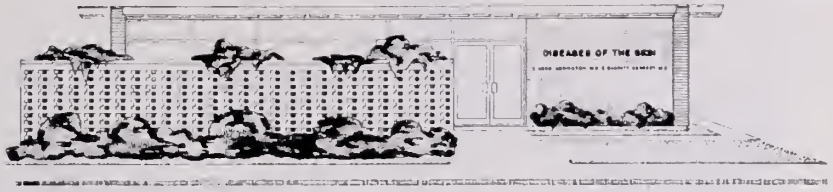
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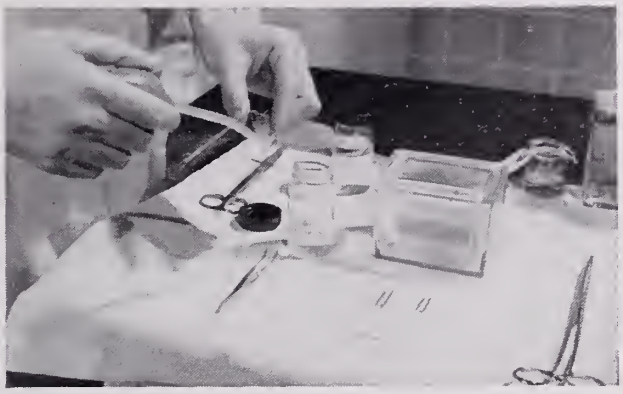
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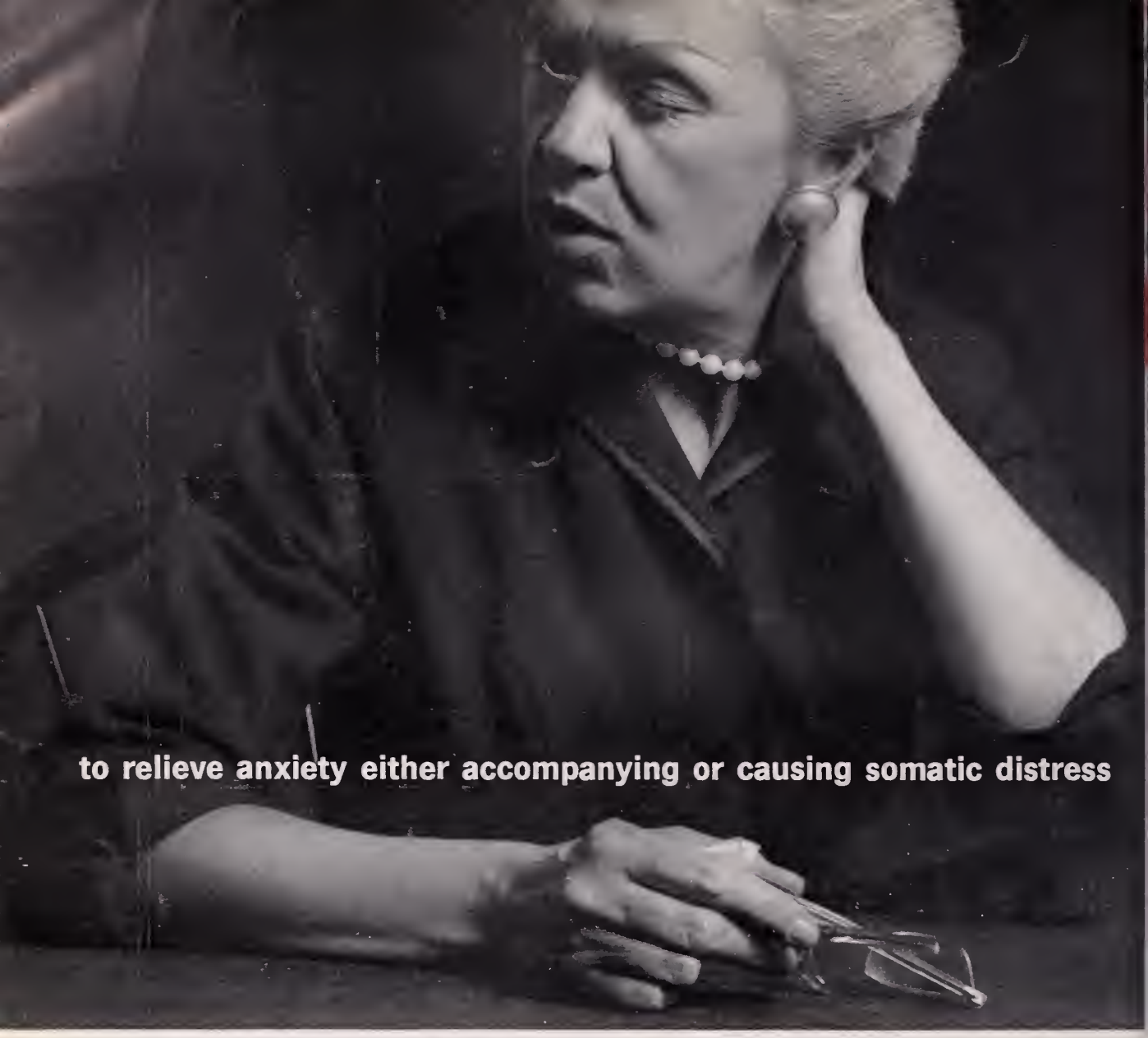
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1. Marx, F.J., in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, p. 89.
2. Winkelman, N.W., Jr.: *ibid.*, p. 78.

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PHENYLKETONURIA

Public health services to physicians who have confirmed or suspected phenylketonuria patients are now being made available for the first time by the Louisiana State Board of Health through the parish health units. Among the services will be public health nursing follow-up and dietary consultation from public health nutritionists. Pamphlets for parents are also to be made available.

The phenylketonuria program is a part of the routine maternal and child health services offered by the parish health units. Physicians desiring assistance with these cases should contact their parish health unit or the Louisiana State Board of Health. The phenylketonuria program is being developed by the Board's Maternal and Child Health Section, Division of Preventive Medicine, with other public health personnel. A diaper test for detecting phenylketonuria will be performed in well baby conferences in parish health units. While infants under one year of age, and children up to two years of age who are making their first visits to child health conferences, will be offered phenylketonuria tests as part of clinic procedure.

Only if research shows that Negro children are subject to PKU, as it is now thought they are not, will tests be used in clinics to screen them also. As part of the case finding procedure, other groups of children will also be tested in order to detect affected families, e.g.: children with characteristics of phenylketonuria; those with a family history suggestive of it; those with mental retardation of undetermined cause.

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*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

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1. Ganz, S. E.: *J. Indiana*
52:1134, July, 1959. 2. Kearney
Current Therap. Res. 2:127,
1960. 3. Lichtman, A. L.: *K*
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LITERATURE SUPPLYING DETAILS OF DOSAGE AND ADMINISTRATION AVAILABLE ON REQUEST.

(1) Abraham, W., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 132. (2) Crawley, J. W.: M. Clin. North America 42:317 *(March) 1958. (3) Bray, P. F.:* Pediatrics 23:151, *1959.*

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References: 1. Steigmann, F., et al.: Am. J. Gastroenterol. 33:109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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Diagnostic Lung Biopsy: Indications and Limitations*

• When extensive diagnostic study yields no answer in pulmonary disease, lung biopsy is effective in providing an exact diagnosis.

CHARLES A. BESKIN, M. D.
Baton Rouge

THE patient with bilateral diffuse pulmonary disease can present a challenging diagnostic problem to the physician. In most patients, an accurate diagnosis can be made without difficulty after careful history, physical examination and proper execution of laboratory procedures. However, in a substantial number of instances, the etiology of the lesion remains equivocal. A specific histologic diagnosis becomes necessary if an accurate prognosis is to be given or intelligent treatment planned.

Traditionally the management of this problem has been a medical one, and diagnosis has rested largely on roentgenographic interpretation, skin-testing and other less valuable indirect methods. All too often the diagnosis cannot be made until postmortem examination, and treatment is largely on an empiric basis. More recently, the demonstration of effectiveness of the steroids and other chemotherapeutic agents has awakened an interest in more specific methods of diagnosis. The medico-legal implications of industrial pneumoconioses have further underscored the importance of early and exact anatomic diagnosis.

Other Methods

Needle biopsy of the lung has been used for years, but has understandably never gained wide acceptance. It is a blind, inexact method which has obvious dangers despite its apparent simplicity. Scalene node biopsy is a valuable adjunct in the diagnosis of obscure pulmonary disease. It has largely been an effective measure in cases of sarcoidosis and metastatic carcinoma. Biopsy of the scalene lymph nodes can reveal only disease which reflects itself in this area, and a significant number of diffuse pulmonary diseases are not generally reflected by scalene node extension. However, this should certainly be used prior to any more aggressive procedure.

The careful collection and study of sputa, skin-testing, standard laboratory serological examinations and scalene node biopsy are all to be considered in working up a patient before contemplating direct lung biopsy. However, if these measures fail, then lung biopsy in the region of maximal x-ray involvement is certainly

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, in Baton Rouge.

the next step. A standard thoracotomy incision cannot be considered a minor procedure for simple diagnosis, and is unacceptable in the patient with markedly impaired pulmonary function. The technique for lung biopsy having a wide margin of safety with the effectiveness of direct tissue biopsy would therefore seem ideal.

Technique

This approach to the problem was first described and utilized by Classen in 1949, and has been expanded and modified by others since. A limited anterior or (Figure 7) anterolateral intercostal incision is used, generally with the patient in supine position and under endotracheal anesthesia. Lung re-inflation is then controllable, and a small intercostal tube on water-sealed drainage is all that is necessary for the immediate postoperative period. This technique is considerably less radical than the conventional exploratory thoracotomy, and permits the collection of sufficient tissue for histopathologic, chemical and bacteriologic analysis. It is extremely well-tolerated, even by poor-risk elderly patients. In the author's small series there has been no attendant morbidity or mortality, and reports of larger series by Effler and others are in agreement.

Case Histories

Patient L.W.—A 52 year old white shipyard worker, who had been employed for approximately twenty years as an asbestos pipe wrapper. When first seen, he complained of increasing cough and expectoration over a period of four years. He had had frequent upper respiratory infections associated with bilateral anterior pleuritic pain, and recent development of dyspnea on exertion.

A routine chest film (Figure 1) showed bi-



Figure 1.—Patient L.W. Proven disseminated asbestosis by lung biopsy.

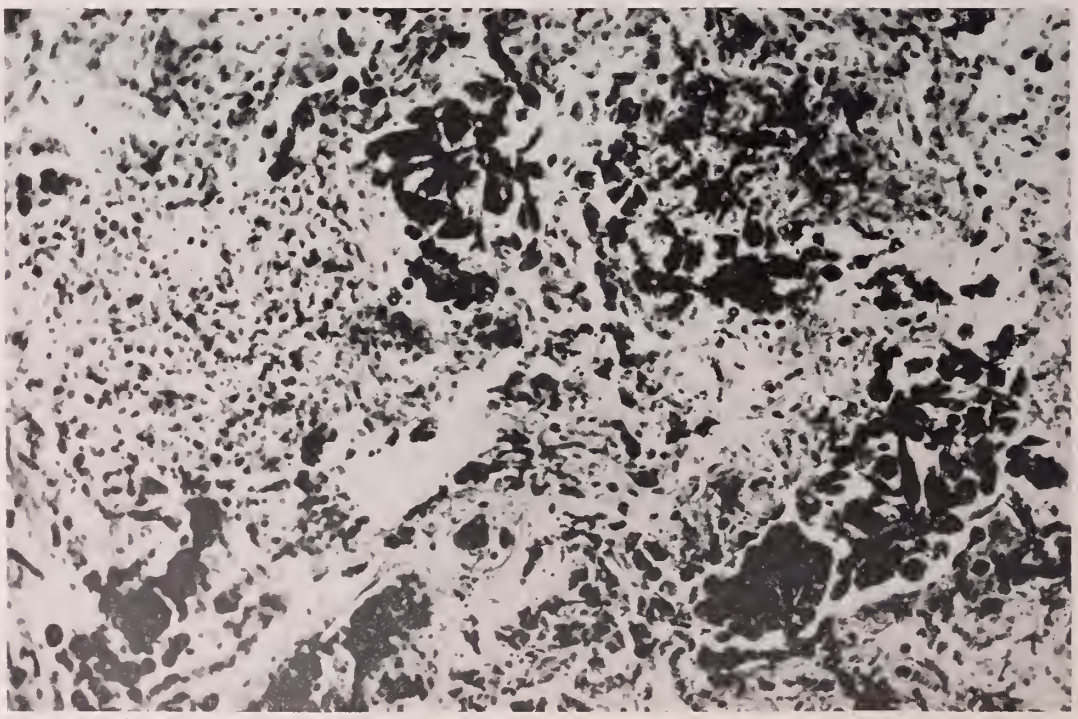


Figure 2.—Patient L.W. Photomicrograph showing perivascular fibrosis and typical asbestos spirules.

lateral parahilar infiltration within both lower lobes and evidence of anterior pleural thickening. Bronchoscopy was negative, and bronchography showed restriction of the left lower lobe with moderate cylindrical bronchiectasis in the basal segments of both lower lobes. A scalene node dissection on the left side was negative.

Lung biopsy was carried out through a 7 cm. left inframammary intercostal incision. The entire left lung was granular with marked visceral pleuritis, chiefly involving the left lower lobe and lingula. A small wedge lung biopsy was taken which showed refractile asbestos bodies scattered throughout the biopsy specimen, with interstitial fibrosis and perivascular thickening characteristic of pulmonary asbestosis. (Figure 2)

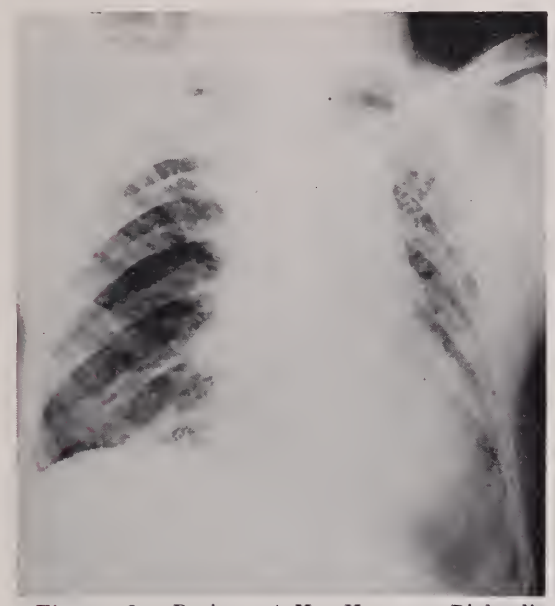


Figure 3.—Patient A.H. Hamman-Rich disease. Proven by lung biopsy.

Patient A.H.—A 68 year old colored male who had worked as a laborer in a refinery for the previous twenty-eight years, with no known exposure to significant pulmonary irritants. Over a period of three years, he was found to demonstrate a progressive nodular infiltrative process within the left lung, with slow development of honey-combing throughout the left lung and a similar process within the apex of the right lung. (Figure 3) This rapidly became associated with dyspnea on exertion, weight loss, cough and intermittent hemoptysis. Exhaustive studies of his sputa were negative for cytology or tuberculosis. Bronchoscopy was normal. A bilateral scalene node dissection was negative. A lung biopsy was carried out through a small left inframammary intercostal incision, and histologic study revealed extensive perivascular fibrosis and a picture characteristic of Hamman-Rich syndrome. (Figure 4) This patient was treated with steroids, but developed progressive pulmonary insufficiency and died several months later.

Patient G.S.—A 34 year old housewife who, since the age of 22 years, had been suspected of having pulmonary tuberculosis because of the slowly progressive development of fibrocavitary

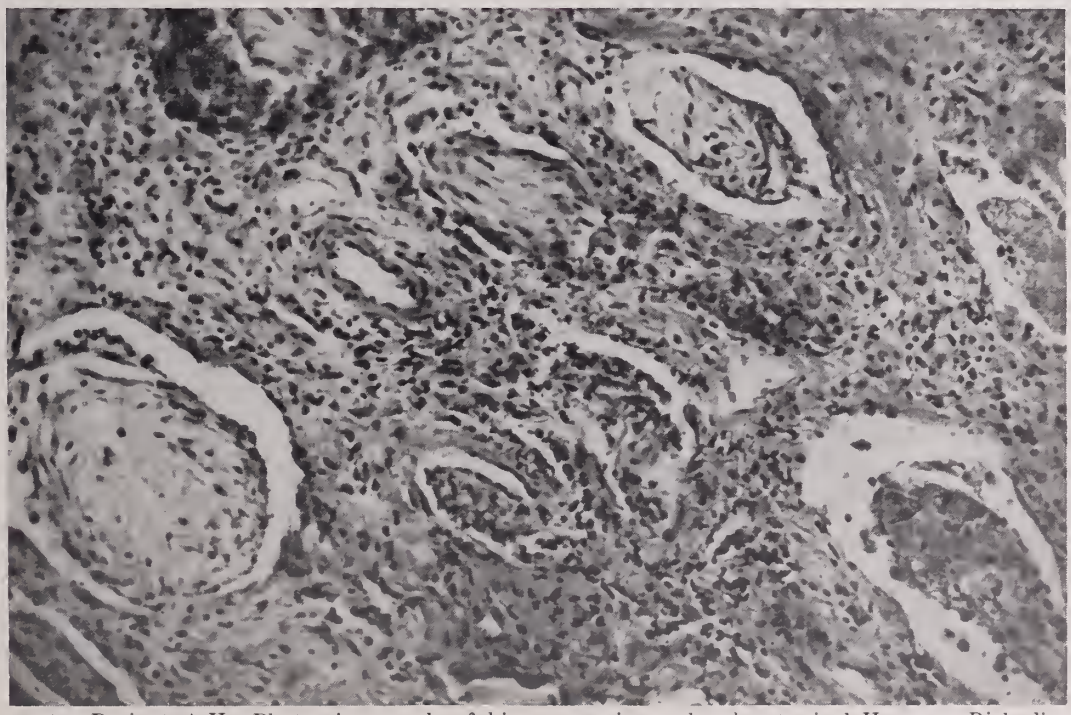


Figure 4.—Patient A.H. Photomicrograph of biopsy specimen showing typical Hamman-Rich disease.

infiltrative disease within both apices. Ten years earlier an isolated positive smear for tuberculosis was obtained in another state, and she was hospitalized for three years in a tuberculosis sanatorium. Throughout this time a positive culture was not obtained, but she was given a full course of antibiotic therapy and discharged. She developed increasing cough, dyspnea, clubbing of the fingers and frequent upper respiratory infections. Her PPD #1 was positive, but repeated studies of her sputa for tuberculosis were negative.

She was readmitted to a tuberculosis sanatorium in 1953 for one year, with symptomatic improvement but no regression of her lesion seen on x-ray. (Figure 5) A bilateral scalene



Figure 5.—Patient G.S. Sarcoidosis with extensive fibrosis and cavitation.

node dissection was performed elsewhere, and these were both reported to be negative. A lung biopsy was performed through a limited inframammary left intercostal incision, with histologic findings typical of Boeck's sarcoid.

Patient A.M.—A 38 year old married female who was admitted to the Greenwell Springs Hospital with a bilateral extensive nodular infiltrate, weight loss of ten pounds and an increase in her cough over a period of twelve months. During a hospitalization period of four months, repeated sputa were negative on smear and culture for acid-fast. Her PPD #2 was weakly positive. Bronchoscopy was negative. It was felt that she might have sarcoidosis, and a bilateral scalene node dissection was performed and negative findings obtained. A small lung biopsy was obtained through a 6 cm. left inframammary intercostal incision, and histologic findings characteristic of pulmonary tuberculosis were found. This patient was then subsequently treated with chemotherapy, with progressive improvement and resolution of her findings. (Figure 6).

Summary

Many cases of diffuse bilateral pulmonary disease cannot be diagnosed, despite extensive diagnostic study. Direct pulmonary biopsy is recommended for these cases. It can be accomplished through a small anterior or anterolateral intercostal incision, allowing the surgeon an opportu-



Figure 6.—Patient A.M. Preoperative x-ray showing bilateral nodular infiltration. Proven to be tuberculosis by lung biopsy.

nity to examine the lung and pleura and select an area for biopsy. The tissue specimen so obtained is large enough to allow complete study by pathologic, bacteriologic and chemical methods. The proper use of this procedure can avoid prolonged and costly hospitalization or confinement in a sanitorium. It carries a negligible morbidity, and usually does not require more than four to five days of hospitalization. Its effectiveness in providing for accurate diagnosis has been demonstrated in a series of 12 cases that were not diagnosed by other conventional simpler methods. (Table 1)

Discussion

Dr. C. A. Waggenspack, Jr. (Baton Rouge): Some day I would like to slip the type-setter a couple of good cigars and get him to transpose the headings on the medical and surgical sec-

TABLE 1
LUNG BIOPSY FINDINGS IN 12 CONSECUTIVE CASES

Patient	Age-Sex	Clinical Diagnosis	Histologic Diagnosis
A.H.	M—68	Pneumoconiosis	Hamman-Rich Syndrome
A.C.	F—38	Pulmonary Tbc.	Sarcoidosis
J.S.	M—40	Pulmonary Tbc.	Non-specific Fibrosis
A.T.	M—45	Sarcoidosis	Lipoid Pneumonitis
F.J.	F—58	Sarcoidosis	Sarcoidosis
H.C.	M—30	Lymphoma	Sarcoidosis
A.R.	M—64	Pulmonary Tbc.	Bronchogenic Carcinoma
M.R.	F—37	Lymphoma-Sarcoid	Sarcoidosis
L.W.	M—52	? Pneumoconiosis	Asbestosis
G.S.	F—34	Pulmonary Tbc.	Sarcoidosis
A.M.	F—38	Pulmonary Tbc.	Pulmonary Tbc.
T.D.	F—34	Pulmonary Fibrosis	Pulmonary Tbc.

tions in the program. I like to think that something of value to surgeons is going on in the current medical meetings, and certainly, this paper should be brought to the attention of the

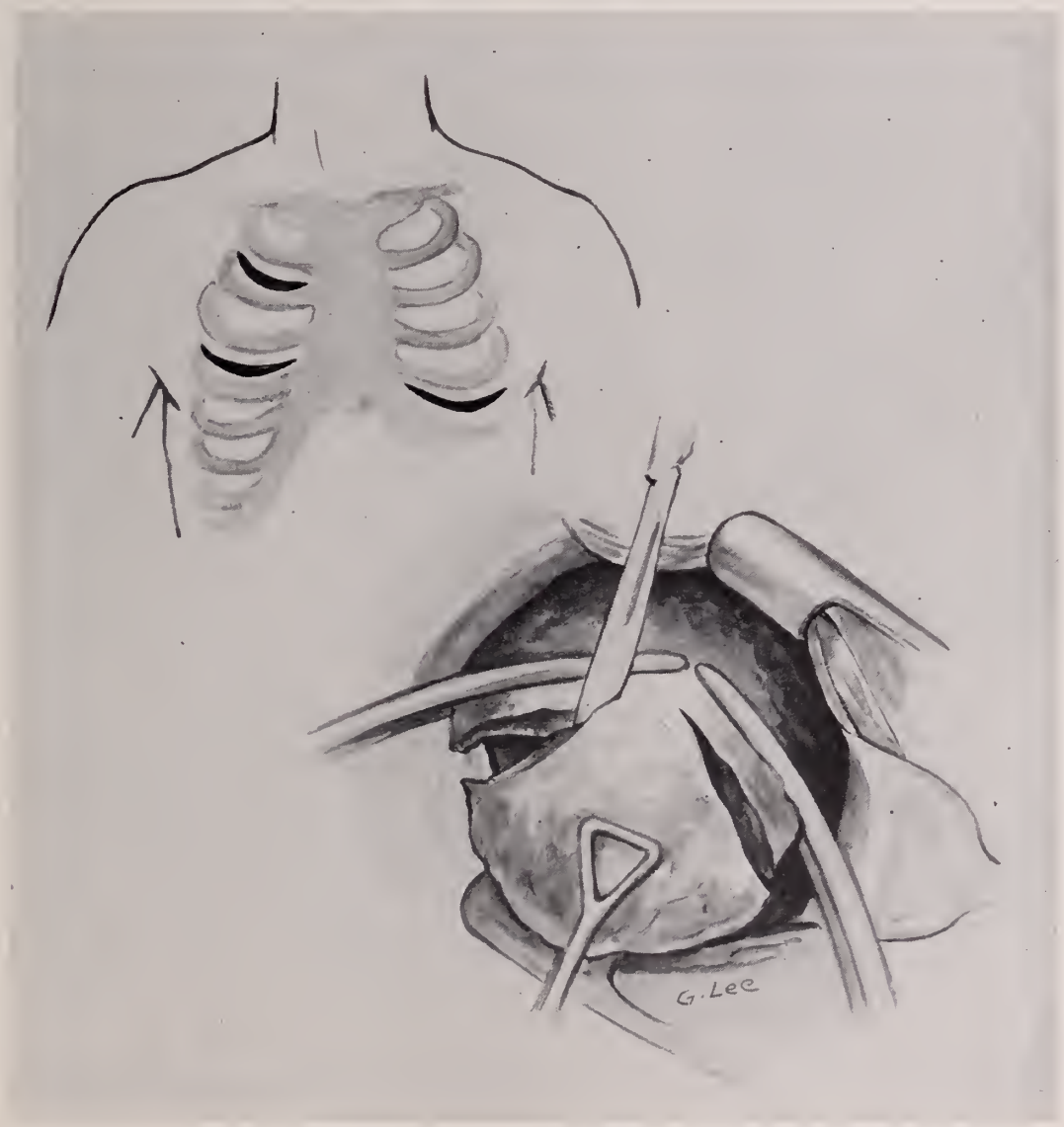


Figure 7.—Schematic outline of usual incisional sites and technique of wedge biopsy.

internists and family physicians.

Most surgeons are already aware that the procedure can be done with minimal risk and admittedly has considerable diagnostic merit, but many of the medical specialists are unaware of the facility with which lung biopsy can be performed. Actually, Dr. Beskin probably treated needle biopsy a little more gently than it deserved, although not necessarily for the same reasons (seeding of malignant cells is probably not much of a greater threat through a needle opening than through a thoracentesis). For one thing, unless the diseased lung is solid and fixed to the chest wall, the risk of tearing up lung tissue is great. Furthermore, in a nodular type of infiltrate, the chances of getting the needle to enter the nodule rather than the surrounding tissue is small. (I can even remember a couple of embarrassing occasions at Charity where even at thoracotomy normal tissue was sent down to the Pathology department instead of the diseased lung). Where the problem is thickened pleura, the indications for needle biopsy are perhaps a little different, since it is possible to get a plug of diagnostically adequate pleura through a thoracentesis needle.

With reference to the specific x-rays that Dr. Beskin showed, I would comment first that it took a brave man to do a biopsy on an emphysematous patient whose only complaint was shoulder pain, but there is no arguing with success, and it seems, in retrospect, that the procedure was well justified.

With reference to the two possible sarcoid patients, probably most of the internists in the audience would have reversed their initial impressions, that is, the patient who was thought to have sarcoid would have been considered probably not to have, and vice versa. Some mention should be made that in sarcoid the scalene node is not the only diagnostic technique of sufficient validity to render an open thoracotomy unnecessary—that is, if a patient has a positive splenic biopsy or liver biopsy and an undiagnosed lung condition, it is probably not necessary to reassert the diagnosis by means of open thoracotomy.

Finally, as Dr. Beskin made clear, the facility with which open thoracotomies can be done in no way should be interpreted as an excuse for not doing an adequate medical workup before thoracotomy is considered, and when it is done, I voice a plea for the entire medical group, please do not drop the whole specimen in formalin. Cut it in half, put one half in a sterile Petri dish, and send it down to the bacteriologist for maceration and bacteriological and fungus evaluation.



Treatment of Metrorrhagia by Infusion of Black Coffee

Dr. Desprès (Abeille Médicale) recommends the use of this method, which he says has succeeded with him already in three severe cases. The first was a case of metrorrhagia following confinement, which had resisted all the ordinary methods. The second was a case of metrorrhagia due to anemia. It had equally resisted all treatment. The third case was observed in a young woman, aged 26, subject to metrorrhagia, recurring every fifteen days and lasting eight days at a time. Rest in bed and cold compresses had not produced any result. Desprès gave from three to six cups of strong coffee daily. In this dose, it produced agitation, sleeplessness, sometimes even a sort of intoxication.—**London Medical Record.**

New Orleans M. & S. J. 7:1130 (June) 1880.

Cholecystography

• In this thorough study of 543 patients, the author gives results and statistics on points that are important both to the radiologist and the clinician in securing an adequate cholecystogram.

RALPH B. BERGERON, M. D.*
New Orleans

"THE methods of skiagraphy are useless for the routine detection of gall stones, and those who have tried the method extensively are the most convinced of its uselessness for this purpose." [2] (1907)

"A negative radiographic report is of no value, because it is not possible to demonstrate all cases of gall stones." [1] (1920)

It is fortunate for the medcial profession and the public in general that Graham, Cole and Copher, in 1924, were able to initiate a movement that would entirely change the above pessimism to one of extreme optimism, and a diagnostic accuracy to one of 97.3 per cent correctness.[3-9] This was accomplished through the development of contrast media for cholecystography.

The early attempts at cholecystography were crude and laborious compared to the relative ease and safety of present examinations. The first test was an intravenous test using 350 cc. of the calcium salt of tetrabromphenophthalein.[4] The obvious disadvantage of an I.V. test, large dose-volume and severe reactions prompted rapid investigations for newer and better contrast media. An array of compounds were tested and tried. The calcium salt above was replaced by the sodium salt which was more soluble and stable, thereby decreasing the dose to 35 to 40 cc. It was necessary to fractionate this dose in two injections—an obvious disadvantage. Improvement followed improvement in rapid succession until our present simplified oral method evolved.

* Resident in Radiology, Charity Hospital, New Orleans, La. Data collected at Charity Hospital, New Orleans, La. and sponsored by research grant from Winthrop Laboratories, N. Y.

Purpose of Study

This is a study of our present-day method. The original purpose of the study was to evaluate a new experimental contrast medium (herein called Cpd. X) for possible general use, as well as Telepaque and Orabilex (Bunamiodyl).†

Also to evaluate all contrast media for:

1. Side reactions
2. Degree of opacification of the gallbladder
3. Presence or absence of calculi
4. Visualization of ducts
5. Residual in bowel
6. Significance of "poorly visualized" and "nonvisualized" examinations.

A general survey of gallbladder disease was included in the study.

Method of Study

(A) Only in-patients were used so that there could be accurate control over dosage.

(B) All patients (except one) received 6 tablets Telepaque (3 Gm.) or 6 capsules Orabilex (4.5 Gm.) or 6 tablets Cpd. X, in rotation, the evening prior to the examination at approximately 6:00 P.M. This was personally administered by the author. One patient was 9 years, weighed 54 lbs. and received 3 tablets Telepaque and got excellent visualization.

(C) A non-fat evening meal was allowed on the day preceding the examination. However, patients were placed on NPO (nothing per os) following administration of contrast medium.

(D) On arrival at x-ray department the following morning, patients were questioned regarding side effects and ap-

† Orabilex for this study supplied by E. Fougera and Co., Inc.

propriate films were obtained. Early in the study radiographs were made in the prone and erect positions with adequate coning where indicated and the films promptly examined. However, this was time-consuming and caused much patient delay in the department. This was shortly replaced by immediate fluoroscopy in the erect position as the initial step in examination. If the gallbladder failed to visualize, a prone PA view of the abdomen on 14″ by 17″ film was obtained. If the gallbladder visualized satisfactorily, spot films were made at fluoroscopy with and without the pressure cone insuring that at least one erect film of the gallbladder was completely free of obscuring intestinal gas or residual contrast medium. In those patients unable to stand erect because of illness, a right lateral decubitus view was taken. No examination was called negative unless there was at least one erect or right lateral decubitus film free of gas which showed no pathology. This is a *sine qua non* to a good examination. Numerous cases were encountered in the series in which very small, radiolucent stones were almost invisible in the recumbent, prone position but "layered out" and became distinctly obvious on an erect or decubitus film.

A scout PA of the abdomen on 14″ by 17″ was then made to check for residual opaque material in the bowel. This was followed by a commercially prepared fatty meal and a coned down PA of the gallbladder in the prone position after an interval of thirty minutes.

Results of Study

The numbers of patients examined are listed in Table 1. At the request of the producer, it was elected to discontinue the study of Cpd. X after 93 cases had been examined.

TABLE 1
PATIENTS EXAMINED

	Cpd. X	Telepaque	Orabilex	Total
Number of Patients Examined	93	269	181	543

The sex, age and weight distributions are listed in Table 2.

A total of 543 patients were examined of whom 68.7 per cent were females reflecting the clinician's higher index of suspicion of gallbladder disease in women.

The side reactions were, in general, of mild severity and, in many cases, nothing more than a continuation of the exact symptoms and distresses for which the patient was initially admitted to the hospital and which had existed prior to ingesting the contrast medium. In no instance was a severe side reaction en-

TABLE 2
SEX, AGE, AND WEIGHT DISTRIBUTION

		Cpd. X	Telepaque	Orabilex	Total
Sex	Men	29	86	55	170
	Women	64	183	126	373
Age in Years	0-20	1	7	3	11
	20-30	4	21	16	41
	30-40	15	41	26	82
	40-50	21	57	32	110
	50.60	22	56	42	120
	60-70	15	57	37	109
	70-80	9	23	17	49
	over 80	6	7	8	21
Weight in Pounds	50-99	6	14	7	27
	100-120	17	43	34	94
	121-140	23	66	43	132
	141-160	19	63	44	126
	161-180	15	46	33	94
	181-200	9	20	10	39
	over 200	4	17	10	31

countered. The "diarrheas" were usually mild, consisted of one or two semi-liquid stools, were self-limited and actually beneficial in that they cleansed the colon to some extent of copious gas and fecal material which are a hindrance to proper examination. (Table 3)

Of all the various side effects, perhaps the most annoying and troublesome to the patients were the three cases of "rash" which occurred. These consisted of a generalized, maculopapular, urticarial reaction associated with itching and general malaise. This was short lived, however, and disappeared fairly rapidly with no sequelae.

Also, it must be remembered that all persons examined were hospitalized patients. The patient's complaints, many of which I am sure are reflected in the side reactions, were such as to prompt admission to the hospital for work-up rather than on an out-patient basis.

Table 4 lists the degree of opacification of the gallbladder. This was interpretated by an observer unfamiliar with which contrast medium the patient had received.

Visualization of the ducts is tabulated in Table 5. The figures are percentages of duct visualization per the sum of the "fair", "good" and "excellent" opacifications for obvious reasons. In almost every case, duct visualization was on the film made following stimulation with a fatty

TABLE 3
SIDE REACTIONS

	Bergeron						Meszaros, Rich [14]	Tice [19]	Bickham, Wissler, Schumacher, Miele [15]		Whitehouse, Fink [17]
	Cpd. X 93 Cases 6 Tabs.		Telepaque 269 Cases 3 Gm.		Orabilex 181 Cases 4.5 Gm.		Orabilex 500 Cases 4.5 Gm.	Orabilex 152 Cases 4.5 Gm.	Orabilex 350 Cases 4.5 Gm.		Orabilex 500 Cases 4.5 Gm.
	No.	Per Cent	No.	Per Cent	No.	Per Cent	Per Cent	Per Cent	No.	Per Cent	Per Cent
None	66	71	156	58	108	59.7	63		259	70	74
Nausea											
Mild	15	16.1	55	20.4	21	11.5					
Moderate	1	1.1	5	2.2	8	4.4					
Severe	0		0		0						
Total	16	17.2	60	22.3	29	16	14	17	39	11	11
Vomiting											
Mild	3	3.2	8	2.9	0						
Moderate	0		1	0.4	0						
Severe	0		0		0						
Total	3	3.2	9	3.3	0		4	3	22	6	1
Diarrhea											
Mild	6	6.4	29	10.8	26	14.4					
Moderate	1	1.1	16	6	8	4.4					
Severe	0		0		0						
Total	7	7.5	45	16.7	34	18.8	4	2	15	4	3
Dysuria											
Mild	3	3.2	8	2.9	0						
Moderate	0		3	1.1	0						
Severe	0		0		0						
Total	3	3.2	11	4.1	0		2		12	3.4	3
Cramps											
Mild	6	6.4	40	14.8	21	11.5					
Moderate	1	1.1	8	2.9	7	3.9					
Severe	0		0		0						
Total	7	7.5	48	17.8	28	15.5	4	1.4			4.4
Other	1	1.1	0		2	1.1	1		3	<1	11

TABLE 4
DEGREE OF OPACIFICATION OF THE GALLBLADDER

	Cpd. X		Telepaque		Orabilex		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Non visualized	32	34.4	69	25.7	35	19.3	136	25
Poor visualization	13	14	13	4.8	7	3.9	33	6.1
Fair visualization	12	12.9	31	11.5	10	5.5	53	9.8
Good visualization	22	23.7	66	24.5	40	22.1	128	23.6
Excellent visualization	14	15.1	90	33.5	89	49.1	193	35.5

TABLE 5
DUCT VISUALIZATION

	Cpd. X	Telepaque	Orabilex	Total
Faint	7	26	11	44
Good	5	22	25	52
Excellent	0	6	13	19
Total	12 (25%)	54 (28.9%)	49 (35.2%)	115 (30.7%)

meal. It might be added here that in no instance did the film made following the fatty meal "discover" a pathologic entity that was not present on the preliminary films. In the patient with papillomas, however, they were more clearly visualized on the film made with the gallbladder in the contracted state. The ducts visualized were mainly the cystic and common bile ducts. Occasionally, the common hepatic duct would faintly visualize.

Residual Contrast Medium

Residual contrast medium in the colon which has remained unabsorbed is rarely of consequence if the gallbladder visualized. Usually, by proper fluoroscopic technique with a compression cone, the gallbladder can be separated from intestinal gas and residual contrast medium. In one instance, however, the residual contrast medium obscured the gallbladder in all projections necessitating a repeat examination but this is the exception rather than the rule. More important (see Table 6b), residual barium in the colon from previous G.I. series or barium enema complicates a satisfactory cholecystogram. It is urged that in elective work-ups for suspected G.I. or biliary disease that the cholecystogram be given preference. In urgent cases the most pertinent examination should come first. Occasionally, an unsuspected obstructing lesion involving the distal stomach will be diagnosed at the time of cholecystography by the fact that most of the contrast medium has remained in the stomach overnight.

Stones and Other Pathology

Sixty-six cases of stones were demonstrated of which 73 per cent were radiolucent upholding the well known fact that the majority of stones are not visible on

TABLE 6a
RESIDUAL CONTRAST MEDIUM

	Cpd. X	Telepaque	Orabilex	Total
Minimal	13	66	29	108
Moderate	20	40	12	72
Dense	15*	12†	5	32
Total	48 (51.6%)	118 (43.9%)	46 (25.4%)	212 (39.1%)

*3 in stomach from obstructing lesions.
†2 in stomach from obstructing lesions.

TABLE 6b
FREQUENCY WITH WHICH RESIDUAL BARIUM FROM PREVIOUS INTESTINAL STUDIES COMPLICATED CHOLECYSTOGRAPHY

Cpd. X	Telepaque	Orabilex	Total
14	37	34	85 (15.7%)

TABLE 7
STONES AND OTHER PATHOLOGY DEMONSTRATED

		Cpd. X	Telepaque	Orabilex	Total
Stones	Radio opaque	2	10	6	18
	Radiolucent	6	23	19	48 (73%)
Calcified Gallbladder		0	1	0	1
Papillomas		0	0	1	1

plain "scout" films of the right upper quadrant of the abdomen.

The one case with papillomas was distinguished and correctly diagnosed preoperatively by the fact that the small radiolucent areas in the gallbladder shadow at the time of cholecystography were constant in position and did not move with changes in body position.

Failure to Visualize

Of extreme importance to the clinician is the problem of what to do with a patient whose gallbladder fails to visualize on a properly performed cholecystogram or visualizes poorly. To answer this problem all hospital charts pertaining to these patients were reviewed and summarized in tables 8a and 8b.

TABLE 8a
FOLLOW-UP OF POORLY VISUALIZED GALLBLADDERS

Total cases	Cpd. X 13	Telepaque 13	Orabilex 7	Total 33
Examination not repeated	7	6	3	16
Examination repeated with double dose of same medium and still unsatisfactory	1	0	0	1
Examination repeated with double dose and stones demonstrated	1	1	0	2
Examination repeated with satisfactory visualization and no pathology	2	4	1	7
Disease of liver complicating examination	1*	1†	0	2
Other	0	1‡	2§	3
Examination repeated with single dose of other contrast medium and stones demonstrated	1	0	1	2

* Hepatitis.
† Congenital polycystic disease of liver.
‡ Uremia with chronic pyelonephritis, BUN of 176 mgm. %
§ Carcinoma of gallbladder; sarcoma of stomach and cholelithiasis.

By review of Table 8a it is seen that a repeat examination was of considerable diagnostic importance in 11 cases—either pathology was demonstrated or a better visualization was obtained establishing a negative study.

Many factors can account for poor visualization or nonvisualization:

(a) Primary gallbladder disease (stones, cholecystitis, carcinoma, hydrops, empyema, etc.)

(b) Obstruction to cystic duct

(c) Primary liver disease (hepatitis, liver failure, metastases, etc.)

(d) Lack of absorption of contrast medium (G.I. tract disturbances, gastroenteritis, retention in stomach or large duodenal diverticulum)

(e) Vomiting of contrast medium

(f) Failure to take contrast medium

(g) Inadequate dose of contrast medium

(h) Eating fatty foods or other gallbladder stimulants after taking contrast medium

Failure of a gallbladder to visualize during a properly performed and regulated oral cholecystogram is almost invariably indicative of gallbladder disease if the other factors such as (c), (d), (e), (f), (g), and (h) above are excluded. However, one must bear in mind that there are sporadic cases of nonvisualization which do get excellent visualization at a later date using the same dose of the same contrast medium and all other factors being equal. For this reason and because of a high yield of diagnostic information obtained, it is recommended that all cases of poor or nonvisualization by the oral tests be repeated at a later date.

In Table 8b it is again noted that repeat examinations were important in 14 cases (7 were subsequently negative and 7 showed stones). Excluding the 3 patients who had prior cholecystectomies, those with no follow-up and those with disease of the liver or other organs which, per se, were responsible for nonvisualization, 49 cases of primary gallbladder and biliary pathology were found at surgery out of a total of 49 cases or 100 per cent. Thus, the clinician should be aware of the high incidence of pathology expected to be present when a patient has a nonvisualized gallbladder by oral tests and extra-biliary factors previously enumerated have been excluded. The patients who had previous cholecystectomies were examined in an attempt to visualize the ducts only and all three were unsuccessful.

In all, the pathology encountered in this series was five times more frequent in women than men.

TABLE 8b
FOLLOW-UP OF NONVISUALIZED GALLBLADDERS

	Cpd. X	Telepaque	Orabilex	Total
Total cases	32	69	35	136
No follow-up	11	26	15	52
Lesions obstructing G.I. tract	3	0	0	3
Examination repeated with same medium and stones found	0	3*	3	6
Had subsequent surgery and stones and/or chronic cholecystitis proven	8	22	16	46
Had repeat examination with satisfactory visualization and no pathology found	4	3	0	7
Carcinoma of gallbladder or bile ducts	0	2	0	2
Primary liver disease (hepatitis, cirrhosis, etc.)	1	7	0	8
Previous cholecystectomy	2	1	0	3
Acute pancreatitis	1	1	0	2
Carcinomatosis with liver metastases	1	4	0	5
Other	1‡	2†	1§	4

* Two of which are included in category just below.

† (1) Suspected hepatoma; refuses surgery.
(2) Repeatedly vomited Telepaque due to psychogenic overlay—kept down Orabilex and stones demonstrated.

‡ Radio opaque stone seen on KUB.

§ Had surgery and chronic cholecystitis without stones found.

Summary

(A) Experience with three contrast media for oral cholecystography is discussed.

(B) A *sine qua non* to an adequate cholecystogram is at least one erect or right lateral decubitus film of the gallbladder completely free of intestinal gas or residual contrast medium.

(C) Side effects encountered are analyzed.

(D) The degree of opacification of the gallbladder is tabulated and reasons for poor visualization and nonvisualization are tabulated.

(E) Approximately 73 per cent of all gall stones are radiolucent in type.

(F) A poorly visualized or nonvisualized gallbladder should have a repeat cholecystogram because of the high incidence of valuable diagnostic information gained.

(G) Factors other than primary gallbladder disease are mentioned which, in themselves, can cause unsatisfactory studies.

(H) Cholecystography should be the initial examination for an elective G.I. work up.

(I) Incidence of 100 per cent of pathology present in nonvisualized cases when other factors excluded.

(J) It is recommended that a cleansing enema or irritative suppository be used h.s. the night prior to the examination to rid the colon of excess gas and fecal matter thereby facilitating the examination.

Note: Acknowledgement is hereby given to Drs. Charles Nice, Jr. and Ramon Mouton for their generous assistance in preparing this article.

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Report on the Epidemic of Yellow Fever, Which Raged at New Orleans in 1878

Dr. E. Berjot

1. The disinfection of a city located like New Orleans seems to me impossible and useless, by reason of its situation between salt and fresh waters; the bayous of stagnant water which are so abundant from Lake Pontchartrain to the river and from the neighboring parishes above down to the sea.

2. What is the cause of yellow fever? Is it a noxious miasm; a ferment; a kind of vegetable organism; elevated temperature; bayous; peculiar topography; stagnation of subsidence of streams and rivers? Such and many more are the questions which deserve the consideration of physicians, of chemists and of naturalists, and to which I look for no answers but hypothesis.

3. Of what advantage is quarantine in a country where yellow fever is endemic? I apply it only to vessels coming from infected ports. As to quarantine between cities and towns in the same region, I regard it as very damaging to commercial interests and totally useless for preventing its spread.

New Orleans M. & S. J. 8:145 (August) 1880

Principles of Treatment Of Congenital Anomalies of the Gastrointestinal Tract*

• The author describes the diagnosis, the preoperative and postoperative care, as well as the surgical technique in the treatment of these congenital anomalies in the newborn.

ROWENA SPENCER, M. D.†
New Orleans

CONGENITAL intestinal obstruction, although relatively uncommon, is associated with a high mortality. During the last five years on the L. S. U. Pediatric Surgery service of the Charity Hospital of New Orleans, congenital anomalies of the gastrointestinal tract accounted for only 6 per cent of the total patients but 53 per cent of the total deaths.[1] All except 2 of the deaths in these patients occurred in infants less than one month of age, and the most common cause of death was atelectasis and pneumonitis.

The most frequent causes of congenital intestinal obstruction requiring operation in the newborn period are esophageal and intestinal atresia and stenosis, annular pancreas, imperforate anus, malrotation, meconium ileus and peritonitis, and Hirschsprung's disease.

Symptoms

The earliest symptom that should arouse suspicion of the possibility of congenital obstruction is polyhydramnios.[2] It is theorized that the fetus ingests amniotic fluid, absorbs the water, and returns it to the maternal circulation; if the fetus has intestinal obstruction and ingests little fluid, polyhydramnios may result. Therefore when the volume of amniotic fluid is excessive, the infant should be watched very carefully for signs and symptoms of intestinal obstruction.

Difficulty in resuscitation at birth occurs frequently in patients with atresia of the esophagus because they are unable to swallow the amniotic fluid in the pharynx and aspiration of a larger than normal quantity of fluid may interfere with establishment of normal respiration. Later, in the nursery, intermittent cyanosis, excessive mucus, and difficulty in feeding will be noted.

The infant born with a distended abdomen should be suspected of having meconium ileus or meconium peritonitis. In meconium ileus, which is associated with mucoviscidosis, the abnormally thick and tenacious meconium causes a mechanical obstruction in the ileum; just above the obstruction a segment of ileum becomes massively distended with soft meconium and may twist into a volvulus. Meconium peritonitis results from prenatal perforation of the gastrointestinal tract, the highly irritating meconium causes the exudation of large amounts of peritoneal fluid, and if the perforation is still open at birth, air will escape into the peritoneal cavity.

The classical triad of vomiting, distention, and obstipation are not always seen in congenital obstruction. Abdominal distention may be absent in a high obstruction because the obstructed segment can be emptied by vomiting, and grossly normal meconium stools may be passed because some meconium is formed in the

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, in Baton Rouge, May 3, 1960.

† Department of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana.

bowel distal to the obstruction.

Vomiting, however, will occur and may be the only early abnormality noted. Since most of the obstructive lesions are below the ampulla of Vater, the vomitus usually contains bile. Regurgitation of bile may be seen in nonsurgical conditions (e.g., sepsis and intracranial damage) but should be considered as due to obstruction until proven otherwise. Bile-stained vomitus should always be regarded as a danger signal; it never occurs with the casual spitting-up and vomiting that is so frequent in normal infants.

Diagnosis

Esophageal obstruction can be diagnosed by nasogastric intubation and x-rays with a small amount of nonirritating contrast material. The films should always include the abdomen, because absence of air below the diaphragm will indicate agenesis of the distal esophagus.

What sort of investigation is indicated in a distended or vomiting newborn infant? In most cases, a single erect or flat x-ray of the abdomen will provide sufficient information to make a diagnosis. Scattered intraperitoneal calcification is pathognomonic of meconium peritonitis. Pneumoperitoneum indicates perforation of the gastrointestinal tract, either spontaneous or secondary to peptic ulcer or deficiency of the gastric muscularis. Massive dilatation of one or more loops of bowel occurs only in congenital intestinal obstruction; the intestine may become moderately enlarged in acquired obstruction, but enormous distention, which develops slowly over a period of months, can occur only in congenital obstruction.

Rarely, it may be difficult to determine whether a very large bubble of air is contained within the lumen of the bowel or free within the peritoneal cavity. Under these circumstances, further investigation is not warranted, because both congenital obstruction and pneumoperitoneum are indication for emergency operation. Incidentally, it should be noted that pneumoperitoneum may result from perforation of any portion of the gastrointestinal tract in a small infant.

In duodenal obstruction, the classical "double bubble" (stomach and hugely dilated duodenum filled with air) is accompanied by absence of air in the remainder of the abdomen. In obstruction distal to the ligament of Treitz, there may be many loops of gas-filled intestine, but there will be one segment, just above the obstruction, which is considerably larger than normal.

If the patient has recently vomited or the gastrointestinal tract contains insufficient air to outline the loops of bowel, the stomach should be completely emptied and air injected through a nasogastric tube. Ordinary room air is a safe and satisfactory contrast material. If an abnormally distended loop of bowel is demonstrated, further studies with lipiodol or barium are specifically contraindicated; gastrointestinal series is not done for intestinal obstruction in adults and it should not be used in obstruction in infants. Reverse peristalsis prevents the contrast material from reaching the obstructed segment, and vomiting may result in aspiration into the tracheobronchial tree.

Infants normally have a large amount of intestinal air; however, uniform dilatation of all visible loops of bowel usually indicates paralytic ileus due to sepsis. Identification of cornified epithelial cells and lanugo hair in the meconium will exclude the possibility of complete obstruction.

Gastrointestinal series with any contrast material except air is contraindicated in complete obstruction but is often necessary in partial obstruction. The patient with incomplete obstruction may not vomit as early, as often, or as much as the one with complete obstruction, and some milk curds will appear in the stools. If vomiting is persistent and the infant fails to thrive, however, gastrointestinal series is indicated. After aspiration of the stomach, 15 to 20 cc. of a thin barium suspension is instilled through a nasogastric tube and the configuration of the

pylorus, duodenum, and jejunum are evaluated. As soon as these structures are visualized, the residual barium in the stomach is aspirated. Vomiting and aspiration are prevented by using a small amount of thin barium instilled into the stomach and promptly removed.

Annular pancreas produces a long circumferential constriction of the descending portion of the duodenum, but it may be impossible to differentiate it from other forms of obstruction in the duodeum. Abnormalities of the duodenal curvature will be diagnosed as malrotation. Follow-up films showing the transit of contrast material through the intestine may demonstrate delay in passage of abnormal dilatation of a loop of bowel.

It may not be possible to differentiate large from small intestine with plain films in an infant. The colon of a newborn infant is without haustrations and may be tentatively identified only by position. If the x-rays suggest colon obstruction and examination of the perineum excludes the possibility of imperforate anus, barium enema is indicated in infants as well as in adults. A tiny unused "micro-colon" is evidence of a congenital small bowel obstruction, and abnormal position of the right colon indicates malrotation. If pale rubbery casts of the colon and then normal meconium are expelled with the enema, meconium constipation will have been diagnosed and successfully treated. Dilatation of the proximal large intestine and a normal sized distal colon is diagnostic of Hirschsprung's disease, even if large amounts of gas and feces are expelled with the enema. Congenital megacolon cannot always be diagnosed by barium enema in the first few weeks of postnatal life, however, because the upper normal bowel is not always sufficiently dilated to contrast with the normal sized distal aganglionic segment.[3]

Preoperative Preparation

If a nasogastric tube was not used before or during the x-ray examination, one is inserted as soon as the diagnosis of obstruction is made. Gentle suction and frequent irrigation are necessary to insure efficient functioning of the tube. The infant is placed on his abdomen in an incubator with maximum humidity and given broad spectrum antibiotics. Protection against infection is required in all newborn surgical patients because of the lack of resistance to infection and because an incision is soon to be made near a contaminated umbilical cord stump or unhealed umbilicus. Necrotizing wound infection and evisceration are common in these patients.

Frequent suctioning of the nasopharynx is probably the one most important feature of the preoperative care. Newborn infants have very poor cough and gag reflexes and easily aspirate respiratory tract secretions and vomitus. Suctioning, at least hourly, with a No. 8 or 10 rubber catheter attached to a machine regulated to 7 or 8 inches of mercury vacuum will remove secretions and stimulate coughing without causing mucosal bleeding.

Unless the diagnosis of congenital obstruction is made within twenty-four hours after birth, fluid and electrolyte deficits must be corrected before operation. One exception is the patient with atresia of the esophagus; this patient has had no abnormal loss of fluid and will probably not need preoperative fluids if the diagnosis is made before the age of 48 hours.

The infant with congenital obstruction will have been in perfect fluid and electrolyte balance at birth, due to the placental and maternal circulation, and most of the fluid vomited during the first few hours after birth will have been lost from the circulation and replaced before birth. After twelve to twenty-four hours of vomiting, however, dehydration will develop rapidly, due to the lack of intake, the continued loss, and the inability of the immature kidney to conserve water.

In calculating fluids for newborn infants, it is important to remember that moderate dehydration is not harmful but that overhydration is often fatal. A safe

and satisfactory method of correcting dehydration in patients with congenital intestinal obstruction is the diarrhea routine used by the L. S. U. Department of Pediatrics. Salt and water are given rapidly at first, then more slowly, until renal function indicates that potassium replacement is safe. In most cases, these fluids may be given in this order without benefit of blood chemistries:

1. Initial fluid consists of half-strength saline in 2½ per cent glucose, 10 to 20 cc. per pound, in one to two hours depending on the severity of the dehydration.

1a. If dehydration is extreme and shock is present, 5 to 10 cc. per pound of whole blood may be given next. This is not usually indicated in newborn infants because of the normally high hemoglobin.

2. The next step continues the half-strength saline in 2½ per cent glucose, 30 to 60 cc. per pound, over a six or eight hour period. As soon as the patient voids at least once, but preferably twice, this fluid is discontinued and

3. 30 to 60 cc. per pound of NaK glucose* is administered over a six or eight hour period.

At some time during the third step the patient will probably be able to tolerate operation.

An adequate dose of a drying agent is administered at least thirty minutes before induction of anaesthesia; this is a necessity in all pediatric anaesthesia, but the smaller the patient, the more important it becomes.

Operation

Endotracheal anaesthesia is mandatory in operation for esophageal atresia and is the technique of choice in all patients with intestinal obstruction. In infants, intubation is usually accomplished before induction of anaesthesia, to avoid the hazard of laryngospasm. Local anaesthesia is usually unsatisfactory and can be used for abdominal operation only if the patient is too weak to cry and struggle. Whole blood is always given during operation—10 cc. per pound if blood loss is minimal and more if necessary.

Operative technique in surgery of the newborn must be very gentle; rough handling of tissue produces excessive postoperative edema and, later, excessive scarring. Very small suture material is used (5-0 catgut and silk on atraumatic needles) and no more than two millimeters of the cut edge of the bowel is turned in toward the lumen.

Esophageal lesions are repaired through a right transpleural approach. Extreme care must be used to avoid stricture of the trachea and tension on the suture line.

In all forms of congenital intestinal obstruction, operative decompression of the proximal bowel will aid in closing the abdomen, improve respiration by reducing pressure on the diaphragm, and hasten postoperative return of peristalsis. The entire gastrointestinal tract must be thoroughly examined to avoid overlooking multiple areas of obstruction.

Obstructive lesions of the duodenum are not resected, because of the inaccessibility of this segment and the proximity of the common and pancreatic ducts and the superior mesenteric vessels. Treatment of choice is side-to-side duodenojejunostomy,[4] but a very high duodenal obstruction may require gastrojejunostomy.

Lesions below the ligament of Treitz should be resected [5] and bowel continuity re-established with a modified end-to-end anastomosis, using a long antimesenteric slit in the distal bowel. The dilated, hypertrophied, and edematous proximal segment should be resected back to relatively normal bowel; return of effective peristalsis is slow in the segment just above a congenital obstruction.

A Roux-en-Y anastomosis is probably the most satisfactory treatment for meconium ileus.[6] In this procedure, the maximally dilated segment of ileum is resected, leaving in place the portion of the bowel obstructed by inspissated meconium. The end of the proximal segment is anastomosed to the side of the distal bowel,

* NaCl 1.5 gms., KCl 2.0 gms., glucose 35 gms. per liter.

leaving a Roux-en-Y limb about four centimeters long. This distal limb is brought out through a separate incision and used for instillation of pancreatic enzymes postoperatively. As soon as obstruction is relieved in the distal segment, the ileostomy ceases to drain and can be closed electively.

The use of gastrostomy in the above forms of congenital intestinal obstruction will considerably simplify the postoperative care.[7] A No. 16 or 18 mushroom catheter is sutured into the stomach and brought out through a stab wound in the left upper quadrant of the abdomen, and the stomach is sutured to the anterior abdominal wall. This gastrostomy tube will provide adequate postoperative decompression and will obviate the increased secretions due to the irritation of a nasogastric tube. Aspiration will thus be reduced by eliminating vomiting and excessive nasopharyngeal secretions.

Malrotation is recognized by the abnormal position of the right colon. Even though the primary cause of obstruction is midgut volvulus, the duodenum should be completely mobilized. After dividing all abnormal adhesions and reducing volvulus, the bowel is replaced in the abdomen in the position which seems most natural; usually the right colon will be placed on the left side of the abdomen and the duodenum allowed to lie in the right gutter.

Hirschsprung's disease in a very young infant should be treated conservatively with enemas and stool softeners. If this therapy fails, or the diagnosis is made at operation, colostomy is recommended, and at laparotomy, the aganglionic segment is biopsied. Since infants lose a large amount of water in the stools, the colostomy should be in the most distal portion of normal bowel.[3] In constructing a colostomy in an infant, the peritoneum is sutured beneath the exteriorized loop or to the bowel wall to prevent evisceration of the small intestine.

The ideal treatment of an infant with imperforate anus is definitive repair [8]—closure of any existing recto-urogenital fistula, which is assumed to be present until proven otherwise, and construction of a perineal anus. If the condition of the patient will not permit an abdominoperineal pull-through, a high sigmoid colostomy should be made, leaving enough distal bowel for a pull-through procedure at a later date.

Postoperative Care

Postoperatively all newborn infants are kept in the prone position in an incubator with maximum humidity; and antibiotics, gastrointestinal decompression, and nasopharyngeal aspiration are continued.

Intravenous fluids are carefully regulated to prevent overhydration. The volume of urine is probably the best guide to the state of hydration in a postoperative newborn infant; the patient who voids five or six times a day is usually receiving an adequate amount of intravenous fluid.

Maintenance fluid consists of equal parts of 5 per cent glucose and NaK glucose, and the volume is based on the age and weight of the patient. Usually no maintenance fluid is necessary on the day of birth; thereafter the volume is increased 10 cc. per pound per day up to a maximum of 30 cc. per pound per day. Fluid lost from the gastrointestinal tract is replaced volume for volume with equal parts of normal saline and NaK glucose.

Summary

In a newborn infant, the diagnosis of "intestinal obstruction, etiology and site undetermined" is adequate indication for abdominal exploration. Extensive preoperative investigation is unnecessary and harmful. Prevention of aspiration by the use of frequent nasopharyngeal suction, operative gastrostomy, and minimal amounts of intravenous fluids will decrease the incidence of pulmonary complications, the most common cause of death in newborn surgical patients.

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The Law of Slander as Applicable to Physicians

The following paper on this interesting subject appears in the last (August) number of the **American Law Register**, of Philadelphia. It is from the pen of Mr. W. H. Whitaker, attorney at law, of our city, and it teaches a lesson from a very good text.

There is perhaps no class of prefessional men more subject to abuse, and, it is believed, more powerless to obtain redress than physicians. About clergymen, the law has thrown its protecting arm, and public opinion has been wont to overlook, if not to pardon their shortcomings. The clergyman is a sort of privileged person, whose character is tried before and whose conduct is regulated by ecclesiastical tribunals, to which the courts of law have relegated it. Lawyers can take care of themselves.

For alleged professional misconduct, incapacity or ignorance, for rumored unskillful treatment of diseases, physicians who choose may have recourse to legal proceedings. But to cowhide the editor or sue the newspaper for the circulation of a libel, may be said in either case to be a social suicide. The physician must grin and bear it. But if he braves public opinion and asserts his rights, if he endeavors to obtain satisfaction at law, the chances are, to say the least, uncertain. It is doubtful, as the law now stands, what charges of misconduct in a physician in a single instance are actionable.

New Orleans M. & S. J. 8.464 (Nov.) 1880.

Management of Chronic Maxillary Sinusitis In Children

• Too often after removal of tonsils and adenoids, the symptoms still persist. The author reviews the findings in 94 children and draws certain conclusions.

FRANK L. BRYANT, M. D.
Shreveport

THE diagnosis of chronic maxillary sinusitis in children may too frequently be overlooked. The attention of the physician is focused on symptoms which he may believe are due solely to infection in the tonsils and adenoids, when actually they are caused by disease in the maxillary sinus. Tonsillectomy and adenoidectomy may thus prove disappointing for the relief of the original complaining symptoms.

However, there are a group of children whose symptoms are postnasal discharge, frequency of acute upper respiratory infection, and cough with or without expectoration. For relief of these symptoms they had a tonsillo-adenoidectomy, yet the postnasal discharge, acute colds and coughs persisted.

This is simply another way of restating the original premise set forth in the first paragraph; i.e., maxillary sinusitus may be frequently overlooked.

This report is based on a study of the histories and observations of a group of 94 children who were seen from 1955 to 1959, inclusive. The conclusions, herein, are consistent with those based on a similar study by the writer in 1953.[3]

Of these 94 children on whom a diagnosis of maxillary sinusitis was established, 48 referred to as "Group A" had not had a tonsillectomy and adenoidectomy previously done elsewhere before being seen by the writer. The remainder (46 children) had had their tonsils and adenoids removed. They are referred to as "Group B."

Rhinologic Examination

Unfortunately, there is no diagnostic sign which is pathognomonic of sinusitis. However, upon examination of a typical patient, the nasal mucous membrane appeared more congested and the nasal breathing space was diminished. In such patients, gross mucopurulent exudate could often be observed in the middle meatus and/or on the floor of the nose.

Nasal smears for bacteria, pus cells and eosinophils were routinely made on all patients. In Group A (those in whom tonsillo-adenoidectomy had not been done), only 8 of the 48 showed eosinophilia; while the remainder showed bacteria and predominance of polymorphonuclear leucocytes. All of Group B showed bacteria and polymorphonuclear leukocytes; 5 of the 46 had some eosinophilia.

Transillumination did not always give accurate information. In some of the younger children the light shone through the sinus to a greater degree than was expected when correlated with the roentgen ray report. Also, it was observed that the degree of opacity of the sinus did not always indicate the character of the exudate eventually recovered.

Anatomy

The intranasal anatomy of the nasal cavity is of utmost importance. J. Parsons Schaeffer [1] stresses the fact that the ventrodorsal (length) measurement of the maxillary sinus in children up to 15 years of age is greater in proportion than the cephalo-caudal (height) and the mediolateral (width) dimensions of the sinus. He cautions against using the inferior meatus or canine fossa in children as a surgical approach, since either approach may result in injury to the permanent teeth buds.

He recommends employing the natural ostium for aspiration of exudate. Schaeffer also states that the middle meatus is largely overhung and hidden from view by the large valve-like and operculatory character of the middle turbinate. The anatomical configuration can be of such character as not only to mitigate against conservative office treatment such as anterior nasal suction or displacement procedures, but also to spend needless time and to prolong the morbidity.

The natural ostium, according to Warren B. Davis,[2] varies from a narrow slit-like opening to form an oblong or ovoid opening. It varies in size, 2.5 to 4 or 5 mm. up to 14 years of age.

Physiology

The cilia of the mucous membrane of a paranasal sinus move the mucus and any foreign material by an escalator-like and sweeping action toward the natural ostium. Since most of the secretion is constantly flowing—moving toward the opening of the sinus cavity, it remains clear and open. However, when infection exists the mucus is changed to mucopurulent or frankly purulent in character. It becomes thicker and more viscid and thus makes it difficult for the cilia to move. The mucous membrane becomes swollen, edematous and eventually thicker. Some of the exudate may exude through the natural opening and some is absorbed by the blood and lymph. If the pathologic process continues the entire cavity is eventually obliterated and the air space is replaced by exudate, if the production of the exudate is greater than the outflow.

Symptoms

Group A—48 patients
(Those with tonsils and adenoids present)

1. Acute upper respiratory infection (More than 3 a year—average 7) 40
2. Nasal obstruction, unilateral or bilateral 34
3. Cough with expectoration 28
4. Cough without expectoration 12
5. Headache 8

Group B—46 patients
(Those without tonsils and adenoids)

1. Postnasal discharge 42
2. Nasal obstruction, unilateral or bilateral 29
3. Cough with expectoration 26
4. Acute upper respiratory infection (More than 3 a year—average 5) 16
5. Cough without expectoration 10
6. Earache 3

TABLE 1
DURATION OF SYMPTOMS WHEN FIRST EXAMINED

Group A	Group B
3 months to 3 years	6 months to 5 years

29 had symptoms antedating tonsil and adenoid removal.

TABLE 2
INCIDENCE

	Group A
Age	3 to 14
Greatest number	5 to 7 years
Sex	26 males - 22 females
Race	All white
	Group B
Age	5 to 16
Greatest number	7 to 10 years
Sex	27 males - 19 females
Race	All white

Previous Treatment

Group A—48 patients

The parents of 12 patients had been previously told that sinus infection was present. Nose drops or nasal sprays were used in conjunction with courses of antibiotics. Several (14) had tamponade treatments or displacement. All the parents were unanimous in stating that there was only either a temporary cessation of some of the symptoms or they were only less severe. None, however, became free.

Group B—46 patients

In this group of patients all had had tonsillo-adenoid surgery. Twenty-nine of the parents said that the symptoms which the child had complained of, or what they as parents had observed, not only antedated the tonsil and adenoid surgery, but persisted as greatly afterwards. Twenty had some form of nasal treatment either tamponade, anterior nasal suction, or displacement. When the sinus infection had been previously diagnosed, the parents were told the sinus infection would subside after the throat surgery. It did not.

General Examination

All patients had a general physical examination to eliminate the presence of other lesions or foci of infection. Only those with maxillary sinus infection with or without tonsils are included in this survey. All had complete blood counts, sedimentation tests, and heterophile titrations. Those with recent acute upper respiratory infection (acute rhinitis, acute otitis media, acute nasopharangitis) showed some leukocytosis. An increase in the sedimentation rate 10 to 18 mm. was normally present although in some, it was actually normal 4 to 8 mm. Those with symptoms over a long period of time showed the higher readings. The frankly allergic child with asthma and/or hay fever was not included in this survey.

Rhinologic Examination

As stated above there is no one pathognomic sign for sinusitis. The otolaryngologist must be alert to not only the possibility but also the probability. If the nasal chamber seems heavily congested, if there is more than an average amount of mucopus, especially on one side, if transillumination seems the least impaired, a roentgen ray of the maxillary sinus is indicated. In other words, clinical examination is not infallible.

The roentgen ray will reveal the presence and extent of the sinus infection. I believe it to be the most important adjunct for diagnosis.

Surgical Procedure

All the patients are operated upon under general anesthesia.

A mouth gag is inserted to facilitate removal of any postnasal discharge or bleeding that occurs during operative procedures. Next, the middle turbinate is visualized and gently pushed mesially by any slender rigid (closed) alligator-type instrument. This accomplishes three things. First, it affords easier access to the small natural ostia of the sinus. Secondly, it facilitates postoperative drainage from the sinus. And, lastly, it insures better and more lasting results from postoperative treatment.

Next, a rigid, curved, natural ostium cannula is inserted through the natural ostium which is usually small. If not promptly found (which is seldom) the cannula is forced through the pars membrancea. In either instance it is then possible to reach all portions of the sinus cavity by manipulation of the external portion of the cannula.

In younger children, those three to nine years of age, the cannula is forcibly yet gently pushed and pulled so as to enlarge or dilate the opening into the sinus. In older children, a small curved cutting forcep is inserted into the opening and an enlargement carried out. Only three or four, at the most, judicious bites are all that are necessary. Gentle suction both intranasally and into the antrum and then postnasally is done.

The exudate from the sinus is collected in a glass suction trap and sent to the laboratory for culture and sensitivity tests.

The bleeding is usually minimal. If brisk, it usually lasts for only a few minutes and only rarely is an intranasal packing required.

Postoperative Observations

Subjective: It is not unusual for the child to volunteer that he can breathe more easily through the nose three or four days after surgery. This is true even if adenoid tissue is existent. Those who had a cough either with or without expectoration rapidly improve from this symptom.

Objective: During the postoperative days in the hospital by anterior rhinoscopy mucopus can be seen exuding in the middle meatus. After a few days the mucous membranes lose their congestion and swelling and the nasal space increases in size.

Postoperative Care

An antibiotic is given every four to six hours for the first day and then every eight hours; when the report of the culture and sensitivity test are returned at the end of forty-eight hours, the indicated antibiotic is prescribed and frequently

augmented by the second indicated one.

On the first postoperative day and for three successive days, anterior nasal suction is done to remove the old coagulated, bloody mucus and mucopus.

Hot moist packs are also applied over the cheeks for thirty minutes at least three times daily during the hospitalization and the patient is instructed to draw backwards into the throat the exudate and expectorate it. The patient is usually discharged on the fourth or fifth postoperative day.

The child is seen in the office for further nasal suction about every fourth or fifth day from two to four weeks. At the end of four or five weeks from the date of surgery, another roentgen ray of the sinuses is taken. In about every instance a marked improvement, if not complete clearing of the sinus, is observed. In 7 of the Group A and 4 of Group B, residual mucous membrane thickening persisted but the children were asymptomatic and gaining in weight.

All parents were advised to keep the child out of swimming for the ensuing summer.

Summary and Conclusions

A series of 96 children who had severe maxillary sinusitis infection were studied. The report of sinusitis was established by roentgen ray examination.

Previous conservative therapy gave little or no relief.

Tonsillo-adenoidectomy did not effect a relief of symptoms.

An enlarged natural ostium was made after the middle turbinate was mesially displaced.

Postoperative treatment consisted of antibiotic therapy and nasal-sinal suction during hospitalization; this was continued for approximately one month.

A high percentage of cures can be obtained by this method of management.

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Health of New Orleans

The month of August has been remarkably healthy, comparing favorably with the corresponding month of the past ten years. The records of the Board of Health are not yet quite complete, but there is good reason for believing that the number of deaths has been less than has occurred in August since 1866.

Malarial fevers have increased, but the type of the disease is not malignant, and but few deaths occur from this cause. Cases of diphtheria and scarlet fever are occasionally reported. Measures are instituted to prevent their increase, and apparent success has attended the sanitary methods employed. Not a case of yellow fever has been reported.

New Orleans M. & S. J. 8:290 (September) 1880

Current Concepts in Nasal Reconstruction*

• The shortcomings of nasal surgery have been recognized and new techniques designed to restore nasal function.

GERALD JOSEPH, M.D.
Baton Rouge

IT WAS almost twenty-five centuries ago that Confucius said, "I have not discovered nor do I offer that which is new; I seek but to restore the ancient morality." His words apply well to the subject for discussion in this paper. The problems of nose surgery are ancient and well recognized. During the days of Confucius nose operations were performed most frequently to restore the organ punitively severed from criminals or captive warriors. They were unreliable and usually done in illegal secrecy by quacks. Today there is no legal interdiction against nasal surgery but its value is still questioned by doctors and laymen alike.

This attitude has been somewhat justified, for the indefinite indications, uncertain technics, and unpredictable results of this surgery in the past have left much to be desired. There was a lull in progress but rhinologists have revived efforts to improve the situation and it is felt that rhinologic surgery can now be performed to produce beneficial results with acceptable regularity. Unfortunately, rhinology is a graduate study and many medical practitioners in other fields are unaware of the rapid strides which this specialty has made. The old anathema toward operating upon a nose is widely maintained and maledictions against the procedure are often spoken hastily without regard for recent improvements in nasal reconstruction. The rhinologist can correct this error by informing his colleagues of the current principles and concepts which have established nose surgery as a reliable medical science.

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

Awakened Interest in Preservation of Nasal Function

The first manifestation of renewed efforts to improve rhinology was an awakening of interest in nasal function. The physiological studies of Mink and his contemporaries were overlooked during the early twentieth century which marked an era devoted primarily to technical proficiency. Cocaine and novocaine had recently been introduced for local anesthesia and, with the pain of operation briefly under control, Freer and Killian led the field in a quest for surgical methods to speedily remove all obstructive submucous portions of the nasal septum. This atmosphere of haste obscured the need for restoring normal anatomy and the nose was left without support. Certain shortcomings of these septal operations were immediately apparent but this important advancement in nasal surgery served as sufficiency for quite a long time.

It is now appreciated that undesirable sequelae from nose operations may require years for full development. By the late twenties enough unhappy results from extensive nasal surgery had been observed to demand further assessment of the situation. Reconsideration of nasal physiology indicated the need for proper anatomical configuration rather than extensive space in the nasal fossae. The old morality was restored as Confucius said and rhinology again becoming mindful of the pioneer studies of nasal function reappraised and added greatly to them and applied the knowledge in surgical practice.

The human nose was now appreciated as an organ of high phylogenetic order specific to man and adapting him to an efficient active existence in the upright

position; not a simple channel for passage of air but an essential organ of respiration which prepares air quantitatively and qualitatively to be transferred to and from our pulmonary system. Logical nose surgery had to be developed to restore such an important and elaborate organ for a midseptal evulsion of cartilage and bone was solely inadequate and often improper. Physiological reconstruction of the total nose was what the operation demanded.

An important influence in technically improving nasal surgery was the introduction of rhinoplastic principles to the rhinologist. Samuel Foman, trained by Jacques Joseph, the father of rhinoplasty, recognized the vital importance of incorporating external pyramid surgery with operations on the nasal septum to create a surgical science of total repair. He unselfishly devoted the climax of his career to teaching plastic surgery and rhinoplastic technics to interested rhinologists hoping that they might contribute their knowledge of intranasal surgery and physiology. Maurice Cottle and his group represent a most complete example of this concept and through such efforts the science of rhinology has properly attained a status similar to otology and laryngology in the ear, nose, and throat, triad today.

Improvement in Operative Conditions

One very fundamental development from melding rhinoplasty into rhinology was establishment of methodical and sterile surgical technique in nose operations. Submucous resection of the nasal septum had degenerated into a one-man procedure often performed with bare hands in clinic cubby-holes off a dusty hall. The patient sat upright with a minimum of surgical preparation. The instruments were poorly prepared and there was general laxity in aseptic precautions. The paucity of hope for beneficial results from septal surgery was clearly reflected by the fashion in which it was conducted.

In total contradistinction the nose operation is now done in a completely equipped surgery, with patient supine, comfortable, sedated, and thoroughly prepared in accordance with aseptic principles. Nasal vibrissae are clipped short for better visibility and the field of operation carefully prepared and draped. Precise controlled anesthesia has eliminated haste from the list of surgical objectives. Adequate surgical assistants are provided, the instrumentarium and illumination are generous, and strict attention to detail is maintained. The operation is performed in an atmosphere of dignity and importance which conveys a feeling that beneficial results are reasonably assured.

Preoperative examination and analysis today include mask making, photography, complete x-ray and laboratory study, and tests of nasal functional efficiency. Surgery is planned according to the difficulties and abnormalities presented by each individual nose. The septum, the bony vault, the cartilaginous vault, the lobule tip and the lobule base are treated as separate units, all integrated into the total procedure.

Postoperative care is attentive and methodical. The nose is properly dressed inside and out to be held gently but firmly in its new position. Dressings are inspected twice daily, adjusted and removed with diligent surgical cleanliness.

Medication is exact and closely supervised with minimal reliance on a list of routine orders. Intranasal dressings remain in position until the tissue reaction subsides and allows the dressing to part from the mucosa without damage. It is then gently removed and withdrawal is discontinued if excessive bleeding or pain occurs. Patients are soon ambulatory but an injudicious quick return to full activity is discouraged. The operation is planned when a period of adequate free time can be devoted to convalescence. Nasal surgery is never presented to the patient as a three-day process easily accomplished during a long week-end.

The generally utilized procedure during the years before World War II was the Killian type septal resection. It was a broad attempt to provide space within the nasal fossae for passage of air and drainage of the paranasal sinuses. Nothing more was considered and the need for restora-

tion of proper nasal function was overlooked. Turbinates were ofen concomitantly destroyed and sinuses extensively exposed and curetted. One must not be unduly critical of this radical sacrifice of essential structures, for at that time the alternative may have been loss of a life. Before the introduction of systemic antimicrobial drugs infection was extremely difficult to control and complications of sinusitis had fatal potential which reduced breathing problems to a secondary role. Now that severe sinus disease is less dangerous rhinologists may devote more surgical effort toward reestablishment of a physiological nose. The septum requires preemptive consideration in this process and must be restored rather than resected.

Prevention of Postoperative Complications

The aim of nasal surgery today is reconstruction of anatomy for reestablishment of function. Included in this must be prevention of postoperative sequelae which create septal and external nasal deformities more disabling than the original problem. These sequelae are frequently responsible for nose surgery's unsatisfactory results. The possibility of their development is inherent in Killian's resection and Joseph's rhinoplasty and they are often observed in the unhappy nose following such operations. Some are unrecognized and the fact that they can be prevented is not sufficiently appreciated.

The most commonly observed postoperative problems are atrophy, septal perforation, saddling of the dorsum, and retraction of the columella. Their etiology is disturbance of nutrition, loss of rigid support for soft tissue, and contracture of excessive scar tissue formation in the healing process. These deformities may not develop for months or years following surgery and the attempt to control them has required long and diligent observation and study. Each of these problems provides a subject for lengthy dissertation but only brief consideration is possible within the scope of this paper.

Atrophy

Atrophy basically encompasses nearly all of the undesirable postoperative sequelae observed. Nasal atrophy as distinct from atrophic rhinitis does not imply crusty exudates and foul ulceration. Any thin firm aglandular mucous membrane or skin fixed by fibrosis is atrophic. It does not function properly and contributes to nasal discomfort. Atrophy results from disproportion between soft tissue covering and underlying supportive structures which necessitates stretching and creates disturbances in innervation and blood supply. Other causes are irritation from exposure to air currents and fibrous replacement of tissue excessively traumatized by surgery.

The potential for surgical atrophy lies in all portions of the nose and its prevention must be an underlying concept throughout the operation. Incisions should be sharp and precise, dissection should follow exact anatomical planes and the nutritive supply lines should be maintained intact. Perichondrium and periosteum should not be removed for they nourish the rigid support structures. Mucous membranes must be preserved to the last millimeter so that they need not be stretched to recover the area from which they were elevated. Sharp projections or prominences should be reconstructed into flowing planes to minimize exposure, interference with air currents, and tensions on soft tissues. In order to do this one must have a technical method to approach, dismantle, and repair any or all portions of the nasal septum or external pyramid. Such technics are provided in current nasal operations by combinations of the old septal surgery with modified rhinoplasty procedures.

An important measure in the prevention of atrophy is reposition of material to provide space and substance to develop a new substantia propria. Mesothelial tissues such as cartilage and bone should be implanted beneath replaced soft tissues in the septum and nasal dorsum to prevent occupation of the space by a contracting cicatrix instead of re-establishment of a free nutritive layer. This is not considered

grafting for these mesothelial implants are not expected to grow but to act as separator media and allow the mobility essential for nutrition.

Further mobility is provided by full resection of excessive bone and cartilage in a nasal hump or any other portion of the nasal vault. The modified rhinoplasty technics allow this to be done without simultaneous loss of soft tissue covering. A large dorsal projection may have developed from excessive bone and cartilage without similar growth of skin and intranasal mucosa. In reducing the projection, bone and cartilage must be removed or repositioned separately with total preservation of the soft tissues which then will be more proportionate to the rigid support. This will relieve tension on the skin and mucosa, prevent atrophy, and allow redevelopment of normal structure and resumption of a functional role.

Postoperative Perforations of Septum

Postoperative perforations of the nasal septum develop when free edges of torn mucosa from opposite sides are allowed to grow together. They destroy septal integrity and interfere with optimal nasal pressures and air currents. Their prevention is inherent in the general principles of septal restoration for a perforation is actually an area of absolute or total atrophy. Mucosal tears cannot always be avoided but they can immediately be repaired.

Nasal mucous membrane should be elevated from underlying bone and cartilage together with perichondrium and periosteum. These are the regenerative layers and they should not be removed with the rigid structures. Any amount of time and care is justified to prevent the mucosa from tearing and though it is best to avoid unnecessary separation of the mucosa, it should be sufficiently mobilized to allow free reposition. If an unavoidable tear occurs mucosa should be elevated from the surrounding area including floor and dorsum to allow approximation of the margins for suturing without tension.

In addition to full mobilization and reapproximation of mucosa, cartilage should be implanted into the septal space between the mucosal layers to prevent contact between the margins of tears on opposite sides. This is best done after the intranasal dressing is in place to stabilize the septal implants. Autogenous or preserved cartilage may be used as well as bone material. Sharp projections should be eliminated and free edges about any incisions carefully covered. Intranasal dressing should not be packed too tightly and its removal should be delayed until it easily dislodges without displacement of tissues repaired at surgery.

Saddling of Dorsum

Saddling, slumping, sagging or collapse of the nasal dorsum is actually a description of one external result of septal atrophy. This saddling occurs in the cartilaginous vault and is to be differentiated from the classical luetic saddle from necrosis in the bony dorsum. Postoperative saddling develops from removal of the septal support and from the pull of a contracting intraseptal cicatrix which occurs when the damages of septal resection are left unrepaired. It is accompanied by outward bulging or ballooning of the lateral cartilages with broadening and flattening of the nose. Good appearance is lost and nasal function greatly disturbed.

Prevention of saddling is based on proper recognition of its source. If possible one must avoid resection of the anterior or so-called dorsal border of the septal cartilage. In addition, the cicatricial pull from healing scar tissue in the resected area of septum may be prevented by insertion of cartilage pieces into the space. This disrupts the direct pull of contracture between a firm fixation point on bone at the anterior nasal crest and spine and the weakened dorsum. Also the cartilage pieces preserve space and provide material for a loose connective tissue to develop instead of dense cicatricial formation. Thirdly, some of the cartilage may persist and give intermittent semirigid support. A single large piece of cartilage does not serve this purpose well for it fails to disrupt the line of force of the contracture and is difficult to position and maintain.

If it is necessary to remove dorsal septal cartilage immediate dorsal repair by replacement with fresh or preserved material should be accomplished. Access has already been provided and repair of the defect is much easier when done before masses of heavy scar tissue develop in the area. Material for such repair must be available during nasal surgery to meet any contingency encountered. Cartilage and bone banks are therefore an essential part of the armamentarium of today's rhinologist and his surgical repertoire should include removal of cancellous iliac bone and rib cartilage for implants.

An important means of improving support of the lower dorsum is the process of narrowing the nose. This reduces the span which must be supported by the lateral cartilages and improves their mechanical position of action. Narrowing requires mobilization of the bony dorsum to be successfully maintained without tension and also necessitates lobule alteration. Therefore rhinoplasty technics enter into prevention of saddling and are used by the rhinologist for a great deal more than cosmetic surgery.

Columella Retraction

Columella retraction originates from destruction of the caudal end of the septum without subsequent repair. As in saddling, scar tissue forms in the caudal septal space and contracts, drawing the columella inward or upward and rotating the nasal tip down. Air is directed improperly and a deformed uncomfortable nose results. The caudal portion of the septal cartilage projects far beyond the nasal crest and spine and supports the columella below as it does the dorsum above. It is highly vulnerable to injury and an essential structure for nasal function which must be successfully restored when deformed. The inability to deal with this portion of the septum by Killian's operation was one of its major deficiencies and conversely the need to preserve this area was recognized in determining the site of his incision.

Much effort has been expended in the attempt to resect defective caudal septa and restore their normal structure and function. Two notable operations for this purpose were the Metzenbaum and Galloway. The former was too incomplete and the old scar tissue soon pulled the structures back into their aberrant position. The latter involved full resection and replacement by a single plate of cartilage which was set into the columella and held by suturing. This destroyed the membranous septum and created a fixed rigid nasal tip which was uncomfortable and unable to function.

This area can only be restored by careful minute dissection and removal of deformed or abnormal structures followed by accurate reconstruction and realignment. The nasal spine must be exposed and repaired, the caudal septum rebuilt, and the lobule reshaped, by surgical technics which follow a similar pattern but must be varied to match the individual problems. Bone and cartilage implants are used freely and serial operations may be necessary. Though this is septal surgery of great importance it is almost pure rhinoplasty from the technical view point and requires the greatest proficiency in a rhinologic surgeon. Failure to properly restore and maintain a good columella area can destroy the effectiveness of an entire nasal operation.

Repair of Fractures

Recent nasal fractures are loked upon by a rhinologist as the incompleted first stage of a nasal reconstruction. Most, if not all, of the deformed noses which are operated upon are the result of trauma of variable vintage. Independent studies in different sections of the country have shown that approximately 6 per cent of all newborns suffer permanent nasal injury at birth and few of us escape repeated nasal trauma throughout our lifetime. These old fractures are amplified by growth and ultimately cause sufficient cumulative difficulty to demand attention. Therefore, in a sense nasal reconstruction is usually fracture repair and fracture repair is usually nasal reconstruction. If the surgeon is fortunate enough to see the fracture early without scarring and regrowth in improper position he has an opportunity to reconstruct the nose with-

out having to dismantle it first.

Exclusive of minor trauma with simple chip depression of the tip of a nasal bone, nasal injuries require most complete exposure, mobilization and realignment of all parts. X-ray studies are helpful but not infallible in disclosing damage to a nose which may be detected by clinical examination and confirmed at surgery. Fractured cartilages and hematomas do not reveal themselves on x-ray film and bony injury is often found to be greater than x-rays suggest. This implies a more liberal attitude toward open reduction and indicates inadequacy in blindly attempting to elevate depressed nasal bones without disengaging impacted fragments.

Nasal fracture repair is a pseudo-emergency and should be delayed until it can be done properly and completely. When associated with other bodily injury, repair of nasal damage may be postponed until the patient's general condition improves. External facial lacerations should be sutured immediately to minimize scarring but extemporaneous nasal fracture reduction has no indication. Supportive measures and prophylaxis against infection will suffice until facilities can be provided to carefully reconstruct the nose.

The nasal septum is the keystone to full fracture repair. The septum and dorsum are so totally integrated that it is difficult to mobilize a fractured dorsum and replace the fragments properly without first releasing the forcefully crushed septum. Hematomas must be evacuated to allow visibility and remove their obstruction to realignment of rigid structures. Furthermore if hematomas are allowed to remain they are conducive to heavy scar formation which contracts and pulls the nasal structures out of position after fracture realignment.

Fracture repair in children is particularly important and the needless practice of waiting for adulthood or puberty for nasal surgery has long been discarded. The center of development for the entire mid-face lies at the site where the pre-maxilla, maxilla, and vomer unite in the anterior extremity of the base of the nasal septum. The force of external nasal trauma is conducted to this point by the septum and it is often injured and displaced. Immediate repair prevents disturbed development of the upper jaw, anterior teeth, and nasal tip. Nasal pyramid and septal deformities in children should be promptly corrected by reconstruction within the extent allowed by safe periods of anesthesia, and serial surgery is justified if necessary to complete the nasal repair. Contrary to common belief, experience has shown that following repair a child's nose grows more properly rather than reassuming its previous malalignment in exaggerated form.

Summary and Conclusions

The broad aim of this paper has been to demonstrate that modern rhinology has not failed to recognize the shortcomings of nasal surgery and do something about the problem. The technics of septal surgery and rhinoplasty have been combined and redesigned into operative procedures of complete nasal reconstruction done in a meticulous aseptic fashion with physiological principles for guidance. Each total surgical procedure differs from the others in accordance with the individual nasal deformity presented for correction.

The nasal septum is the keystone in nasal reconstruction and surgery on the external pyramid must be integrated with septal surgery to be successful. Nasal reconstruction should be performed completely at any time it is indicated. These principles include recent fractures and childhood nasal repair and adhering to their dictates in such instances has produced optimal benefits.

Nasal surgery is a form of controlled nasal injury and the need for prevention of undesirable sequelae must be appreciated. It is not always possible to fully accomplish this and serial surgery may be required to attain complete restoration of a nose. Secondary nose operations are not always evidence of failure in the initial surgery. They are often anticipated when circumstances indicate that one operation cannot reliably provide all that is needed.

Cosmetic objectives are not primary in nasal reconstruction but a nose repaired

to function properly is always improved in appearance. This relationship cannot be conversely maintained if essential structures are deranged to attain external nasal proportions conforming to fancied perfection. There are valid indications for cosmetic rhinoplasty but they are subordinate to the demands of physiological reconstruction.

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Discussion

Dr. H. Ashton Thomas (New Orleans): I feel privileged to discuss such a masterful presentation as Dr. Gerald Joseph has given because I could not convince myself that so much could be so condensed and still be appreciated by men doing general practice of medicine.

The time is at hand or just about passed when an Ear, Nose and Throat Doctor suggests nose operation that the patient does not feel that a great catastrophe is at hand. In fact the techniques, the physiological thinking, the improved asepsis as well as antibiotics, have done much to eliminate the sequelae and complications which Dr. Joseph mentioned. Truth of the matter is the patient is now the aggressor and comes in wanting to know what can be done surgically to help his nose problem. It is also true, too that our confreres in other lines of medical endeavor are less prone to condemn nose operations.

Water as a Prophylactic and a Remedy

The subject of water drinking seems worthy of more than a passing notice. Many people have a notion that it is injurious to drink at meals. Of course, one may swill down such an immense quantity of water that it shall be injurious, but a moderate quantity of fluid taken at meals is rather beneficial; the abstinence advocated by many is injurious.

* * * *

I find that a very large proportion of those who suffer from nervous exhaustion, neurasthenia as it is called, do not drink enough. Is it an American peculiarity to ingest so little fluid? I believe it is. Will this then partly explain the prevalence of neurasthenia in America? S. J. Webber, M. D. in **Archives of Medicine.**

New Orleans M & S. J. 8:461 (November) 1880

Dermabrasion: Principles of Planing*

• The established role of dermabrasion in dermatologic therapy is emphasized; technique and approach are discussed.

PHILIP RONALD LORIA, M. D.
New Orleans

THE role of scraping of the skin with a high speed rotary instrument is an important one in dermatologic care. This procedure is not to be considered a panacea in the treatment of all skin deformities and/or cosmetic disfigurements. Nevertheless, the use of this dermatologic tool has its place in the various regimens of therapy that may be employed by a dermatologist in the handling of certain skin problems. While the procedure will not be applied as frequently as the more common means of treatment (e.g., ultraviolet light exposure, x-radiation, cold steel surgery, etc.) yet there are certain cases that will derive benefit from dermabrasion to achieve a physiologically and cosmetically superior end-result from therapy.

During the past three years the author has dermabraded or participated in the dermabrasion of some 250 cases. All of these cases have been very closely followed on a hospital and/or outpatient basis. The results have been greatly encouraging for the most part. In only a very few instances have the patients seemed to be displeased. When properly handled in making arrangements before performing the procedure, a most grateful patient will usually be the outcome.

Perfection is the much sought-after goal of most of our endeavors. Quite naturally, when one's work can be so openly viewed as a facial abrasion, the ultimate of good results is most desirable. Unfortunately, the transformation that may be achieved from abrasion has its very definite limitations. Under no circumstances is it recommended that a guarantee of any nature be made. While we can control the performance of the procedure, by and large, the healing depends upon the inherent abilities and attitude of the patient.

Equipment

Technical skill in performing the procedure is not difficult to attain. Basically, a calm, steady and firm hand is required to gently stroke the high speed abrader over the desired surface. The equipment per se is fundamentally uniform regardless of type with the exception of the abrading instrument. This latter may be composed of stainless steel bristles (wirebrush), serrated wheels or diamond fraises. It is left to the operator's discretion as to the particular type of instrument to be employed. Generally, when attacking fragile tissue (e.g., eyelids, bridge of nose, certain individuals—esp. those with senile skin changes, etc.) it is more prudent to resort to the use of the diamond fraise which may be coarse or fine as the case demands. If the tissue to be treated requires a heavier and more destructive approach, then one may use a steel wire brush. This instrument should be used with extreme care as it is highly destructive when handled indiscriminately, but has very artistic facets otherwise.

The diamond fraise is a very easy tool to use: (1) There is little, if any, limitation to its range of motion in that it may be moved to either side, forward and backward, clockwise and counterclockwise with little difficulty. The wire brush, however, is not so versatile. Its range of motion is limited to a downward stroke with some clockwise rotation. (Figure 1). There is considerable torque to the brush as well as the danger of multiple small lacerations from protruding

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 5, 1959.



Figure 1

bristles. If the bristles should be mounted off center, the torque is increased, thereby causing the operator to exert a firmer grip and exercise greater precautions. If, by chance, the hair on some gauze should contact the rotating wire bristles, they are instantaneously snatched up by the latter and may break the shank of the handle as well as startle the patient and the operator. The diamond fraise is superior in this respect in that it will merely shove these obstacles aside instead of becoming entangled in them.

Procedure and Approach

Since tissue regeneration is accomplished through the pluropotentiality [2] of the remaining epidermis and skin appendages, it is readily appreciated how healing is better accomplished when less tissue has been removed. Actually, one is justified in leaving some disfigurements when planing scars as the areas will tend to blend more rapidly on superficial planing. Deeper scars thus will frequently be covered. Healing from superficial abrasion is more rapid and generally with a better and more natural result. On several occasions paired comparisons of different depths of planing have revealed a more satisfactory result on the superficially abraded side.

One should take great pains when completing a dermabrasion procedure to meticulously blend the abraded area with the surrounding tissue. To do this I use a cone-shaped diamond fraise; no anesthesia is required. The broad fraise is carefully applied to the border of the abraded area with very gentle strokes to blend it nicely with the adjacent skin. This gives a finer finish with less chance of a border pigmentary problem.

The patient should be indoctrinated to the goals expected in dermabrasion. One should estimate a conservative amount of improvement to be acceptable (50 to 60 per cent). Generally, this will be the situation. On the other hand it is dangerous to "guild the lily" as a patient may become extremely resentful if he or she fails to develop a fine, satin skin after the procedure. I advise my prospective planing patients as to whether the procedure may reap sufficient dividends. Thereafter, the decision is left to the patient, unless I feel insufficient benefit will be obtained; then the procedure is refused. Each one is told that the immediate convalescence may take about two weeks with a period of one year necessary to complete the total overall picture in healing from dermabrasion.

Complications

The immediate complication of planing lies in error in judgment or technical error during the procedure. Again it is pointed out that deeper planing may create a problem in that the underlying fat tissue is more closely approached. This tissue is quite susceptible to infection; thus the chances for bacterial invasion and infection are greater with deeper planing. At this time I am using prophylactic antibiotics on planing cases. The antibiotic is started on the night before the procedure and continued for a total of four days (or more, if necessary). The patient should avoid contact with all persons who manifest infections regardless of type and/or site. This is a very important part of post-planing convalescence.

Ultimate scarring is perhaps the most disastrous complication of abrasion. Generally, this is a sequel to infection. Nevertheless, if one planes too deeply, resultant scars may ensue and create a major problem. Also, peeling of the crust may lead to avulsion of epidermis and scarring. Thus, the patient must be very carefully advised not to peel any tissue whatsoever

no matter how long the crusts may persist. There is no great hurry in removing these crusts once the area has dried adequately. I have seen some of the best results where the crusts were permitted to remain intact for longer periods of time (two weeks in some instances). The crust is the span on which the underlying epithelium is bridging the gaps made by planing.

We cannot predict the residual pigmentation after planing except by old injuries on the patient; and here the prediction is obviously limited. By and large, the more superficial the abrasion, the better the end result of pigmentation. Also, the more meticulously the borders are blended, the less demarcation by pigmentation is noted. Many problems in pigment are yet to be solved. The best approach at this time in these post-planing patients would seem to be a slow re-exposure to sunlight by using various sun screens and permitting the patient to more normally re-pigment. I advise all my patients that some unpredictable pigmentary problem may result from the procedure even before it is undertaken.

Conditions Treated

Perhaps the greatest role that dermabrasion has come to assume today is in the treatment of senile skin and its associated changes.[3] What better method is there to rid of this potentially malignant tissue than in one sitting with such a patient? While various dessicating and peeling agents may be employed numerous times in treating such a patient, the same purpose may be accomplished with a far superior end-result by planing. The diamond fraise is good for this procedure. A coarse fraise may be used on thickened hyperkeratoses with good result while a finer fraise is adequate to remove most of the delicate senile skin. Too firm pressure with the fraise can result in deeper planing and produce excavations into fatty subcutaneous tissue; however, the wire brush is much more apt to do this and with less pressure. Results will usually be quite good and may be expected to persist for several years or indefinitely. If it be true that the underlying corium is in the main responsible for the epidermal changes,[4] then one can easily see how the procedure will have good results for varying periods of time since the dermis is left intact for the most part.

Acne scars usually respond well to the procedure. I prefer to inactivate the disease before undertaking the procedure and thus minimize the possibility of infection. However, each case must be judged on its own merits. It is well to remember that superficial abrasion will usually give the better result.

Sebaceous nevi and other elevated tumors likewise respond fairly well to the procedure. Adenoma sebaceum, where multiple lesions are present, is an ideal indication for the procedure. Such a case has been found to respond quite well to planing.

Wrinkles in the skin are a nuisance to many people who seek their removal. Dermabrasion here offers a wonderful opportunity toward this end. The wrinkles are frozen in place and then planed away.[5]

The ever-perplexing problem of tattoos is forever confronting us as dermatologists. Because the pigments employed are deposited well into the corium, it has been a trying task to satisfactorily remove these marks. In a destructive sense the wire brush can be employed to rid of tissue in a random and carefree fashion. However, exercising a bit of care and diligence gives us an instrument which is foremost in the removal of tattoos. By abrading into the corium and avoiding descent into the underlying fat tissue, we can rid of most of the pigment without trying to remove all of it in a destructive sense. Much of that pigment left behind will slough in the healing process when the crust peels off. Other of the pigment will remain behind and in time be lost to vision beneath newly formed tissue.

It is important to leave intact as much tissue as possible to make the bridging of gaps more effective and thereby decrease scar tissue formation. All normal skin that has not been tattooed should be left intact to act as foci for tissue regenera-

tion. (Figure 2). One should try to avoid creating too wide a gap for healing in order to minimize residual scarring even to the point of doing the procedure in two or more sittings. Thus, by leaving all normal skin and not planing too deeply we can get a good result with tattoos. (Figures 3, 4). In solidly tattooed areas one might try leaving alternate strips of tattooed tissue for purposes of re-epithelization. Later these initially unplaned strips may themselves be abraded to rid of the remainder of the tattoo.

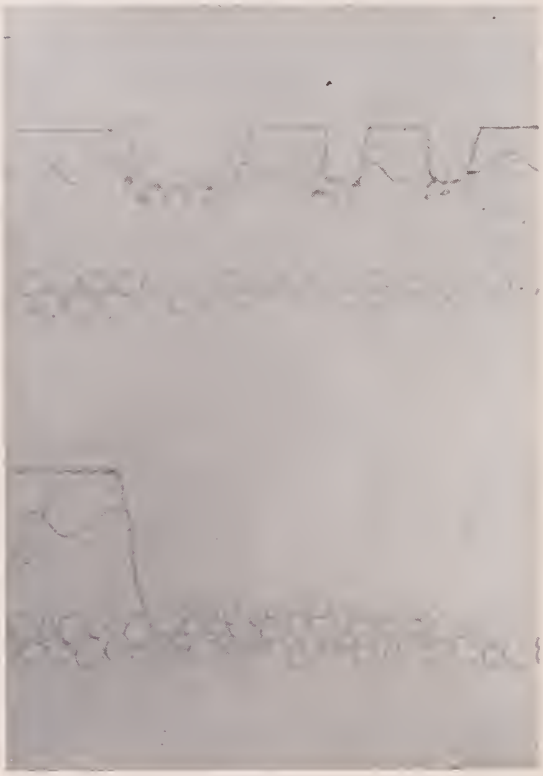


Figure 2



Figure 3



Figure 4

Summary

Dermabrasion has now become a well established procedure in the treatment of various skin problems.

An enlightened patient prior to the procedure will generally be a more satisfied one. A bit of explanation in advance will allay many anxieties.

Types of equipment have been discussed. The diamond fraise is felt to be the most versatile instrument for this procedure; however, a wire brush will be required in some instances.

Infection, scarring, and pigmentary problems are the main complications against which we must guard.

Emphasis on the treatment of senile skin and a new technique for removal of tattoos have been discussed.

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Discussion

Dr. Ollie Williams (Shreveport): The various aspects of dermoplaning have been thoroughly discussed by Dr. Loria with his usual excellence. Only a few points need emphasis. There is a general tendency by all dermatologists doing dermoplaning towards more superficial planing. The end result is better than with deep planing and less complications occur. The diamond fraise has found its niche in planing, but for speed alone the steel brush is more advantageous.

Dermoplaning was first used primarily on patients with acne scarring, but the indications for use of this procedure are now widespread. The treatment of far advanced severe chataigne skin, and subsequent skin cancers, is no longer such an enigma.

Superficial planing of tattoos is the best approach to try initially. In my experience this type of treatment in tattoos far excedes the results seen with other methods of removing tattoos.

The more experienced one becomes with the art of dermoplaning the more we realize its value as an adjunct or specific mode of therapy. The benefit that most patients derive from dermoplaning is extremely rewarding.

Poison of Yellow Fever

Stanford E. Chaille, M. D.

The poison of yellow fever must be, on the one hand, either an inorganic or dead organic substance, or, on the other hand, a living organism. Very few, if any, even of those who credit its spontaneous origin, deny that this poison has reproductive power. The function of reproduction is limited to living organisms, and such must be the nature of the poison of yellow fever. This conclusion is inevitable unless it can be proved, either that the poison has not the power of self-multiplication, or that other than living organisms have this power; and until at least one of these improbable hypotheses is proved to be true, science is justified in both thinking and acting upon the above conclusion. * * *

It is manifest that the failure of the microscope to prove that the causes of yellow fever, as also of typhoid fever, cholera, etc. are living organisms no more disproves this than the failure of all appliances of science to prove that the cause is an inorganic or a dead substance disproves this conclusion; and the mystery as to what is, in truth, the poison, is increased by supposing it an unknown inorganic something rather than an unknown extra-microscopic organism.

New Orleans M. & S. J. 8:303 (Oct.) 1880.

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Editorial

The Prediabetic State

The prediabetic state becomes important to the physician and to the patient in several situations. These occur when the diagnosis is doubtful. They also occur because of the possibility that the disease may develop in the relatives of diabetics.

Diabetes is a hereditary disease. This is generally known to the profession, and the public is becoming more aware of it. The relatives of diabetics seek the physician's help to learn their own condition, the possibilities of the future, and what they should do. The criteria for proving the diagnosis when the disease is fully manifest are well established, although there is some variation in their interpretation. A recent paper by Conn* gives the results of many years' work in this field and points the way by which the clinician may separate the three categories of patients—the nondiabetic, the prediabetic, the diabetic.

Using the Somogyi - Nelson method (true glucose) for the determination of sugar of venous blood, oral glucose tolerance tests were given to patients without diabetic relatives, and to patients who were relatives of diabetics. Glucose, 1.75 gram per kilogram of ideal body weight was given. Each test was preceded by a diet of at least 300 grams of carbohydrate taken over at least a three day period. He regarded as indicative of diabetes a glucose tolerance test which gives a value of 160 mg.% or higher in the first hour, 140 mg.% or higher at one and one half hours, 120 mg.% or higher at two hours. Figures substantially below those stated were regarded as indicative of normal tolerance. When the two hour value fell between 110 and 120, the patient was classified as belonging to a special group designated as probable diabetes. The tests were given to 512 subjects. Later, the same tests were given to 363 of the subjects, preceded by cortisone acetate. If the subject weighed less than 160 pounds, he was given orally 50 mg. of

*Conn, Jerome W.: The Prediabetic State in Man, Diabetes 7:347 (Sept.-Oct.) 1958.

cortisone acetate, eight and a half hours and again two hours before a standard glucose tolerance test was performed. If the body weight exceeded 160 pounds, the dose was 62.5 mg. orally, at the same times.

Following the criteria mentioned above, 387 relatives of known diabetics, but not considered to be diabetics themselves, were tested. Three hundred and two were normal, 71 were shown to have diabetes, and 14 probable diabetes. Among 125 subjects, with no known diabetic family history, 123 were normal, 1 was diabetic, and 1 was probable diabetic. Two hundred and fifty-nine subjects, who were relatives of known diabetics, were tested with the cortisone-glucose tolerance test, each of whom had previously had a perfectly normal baseline glucose tolerance test. In order for an individual to react positively to this test, his baseline glucose tolerance test must be normal and his cortisone - glucose tolerance test should show above 160 in one hour, and above 140 at two hours when cortisone was used. Among these 259 subjects, 95 were negative, and 64 were positive. Among 104 subjects, with no known diabetic family history, using the same test, 101 were negative and 3 positive.

The results of the cortisone-glucose tolerance test are particularly interesting in the 14 subjects who were regarded as doubtful in the standard test. Twelve had a positive response, that is, were diabetic, and 2 negative, that is, the two hour reading was below 140. The two types of glucose tolerance tests were also studied in 19 obese diabetics, who had positive diabetic tests before weight loss and normal after. Using the cortisone, 16 showed again the characteristic diabetic curve, and 3 were negative. It is seen that following this method, 21 per cent of the supposedly nondiabetic relatives of known diabetics have a positive diabetic curve, and that 86 per cent of those classified as doubtful have a positive diabetic curve.

This study also provides further proof that for the purposes of diagnosis a normal fasting blood sugar is unreliable in the relatives of known diabetics, and that in such a situation the standard glucose tolerance test should be used. This can be made even more informative by the addition of the cortisone-glucose tolerance test. In the interpretation, however, of any of these tests it is necessary to know the method of blood sugar determination used and to know the relationship between the normal values for the two usual methods. A normal fasting blood sugar value by the Folin-Wu method is 80 to 120 mg.%, and by Somogyi-Nelson 70 to 100.

These facts, as presented in the article by Conn, and these methods of diagnostic procedure give the clinician confidence in making decisions and in giving advice where the suspicion or possibility of diabetes exists. It is not possible to tell the prediabetic when he will lose tolerance and develop the full picture of diabetes, but it is possible to give him the accurate advice needed for his guidance and provide, so far as present knowledge goes, some degree of protection against the ill effects of hidden diabetes.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

CHIROPRACTIC BILL IS TABLED IN CALIFORNIA LEGISLATURE

The following facts show that Chiropractors once they secure a license which permits them to practice their cult in a state, are always conniving to extend the scope of Chiropractors and to broaden the field of their legal rights over and above the privileges allowed them by the original Act creating their Licensing Board.

Once you give them any legal right to practice, they will be applying for more and greater privileges and become more dangerous to our citizens and their respective communities. Our motto is "Never give them legal status in our State".

By unanimous vote the Senate Business and Professions Committee tabled a Bill (Senate Bill 1334) which, in the opinion of its opponents, would have extended the scope of chiropractic and made it easier for future legislatures to increase the scope of the practice of persons licensed under the Chiropractic Act.

Chiropractors' practice under an Initiative Act was approved by the voters November 7, 1922. Senate Bill 1334 was an amendment to that act, which in turn would have been submitted to the voters at the next general state election. A ballot battle would have been very costly and time consuming.

Sponsored by the California Chiropractic Association the new bill would have added a section to the Chiropractic Act to read:

"Sec. 6.5. Definition of Chiropractic: Scope of Practice. The term 'chiropractic' within the meaning of this Act is the science of healing, based on the restoration of the normal functioning of the human nervous system. The practice of chiropractic under the terms of this act shall be:

"(a) The diagnosing of human ailments by the use of all diagnostic procedures recognized by the various schools of the healing arts.

"(b) The elimination of the abnormal functioning of the nervous system by the adjustment of the articulations and adjacent tissues of the human body, particularly of the spinal column, but shall not authorize the use of any drug or medicine for the cure of disease, now or hereafter included in materia medica, for which a prescription is required under the laws of this State or under federal law, nor shall include the practice of surgery, osteopathy, dentistry or optometry.

"(c) The use of such procedures which make the adjustment effective including physiotherapy, psychotherapy and food supplements for special dietary use.

"(d) The use of all necessary mechanical, hygienic and sanitary measures incident to the care of the body."

MEDICARE

Our Medicare Contract with the Government expired on August 31, 1960, and as you know, our House of Delegates at the last Annual Meeting in May refused to renew this contract. All forms and correspondence regarding the Medicare Program should, now, be sent to the Continental Service Life & Health Insurance Company, P. O. Drawer 2908, Baton Rouge, Louisiana. All Sub-review Area Committees are, now, discontinued as of August 31, 1960.

We want to most sincerely thank the officers of the component parish medical societies and their participating members composing the personnel of these respective Review Committees for their cooperation and assistance in making this program a success. We have been told by the "higher ups" that the Medicare Program in Louisiana, under the supervision of the State Society, was one of the most successful and satisfactorily operated programs, and this is due to the cooperation for our members, for which we are very thankful.

STATEMENT BY DAN O. KILROY, M. D. CHAIRMAN, COMMITTEE ON PUBLIC POLICY AND LEGISLATION, CALIFORNIA MEDICAL ASSOCIATION

"There has too long been a concept among some doctors that medicine and politics do not mix. This concept has the same degree of logic as the popular conception that the ostrich can avoid all difficulties by burying his head in the sand. We must all realize that our license to practice medicine is a privilege and not a right, and that this privilege is given to us by the people of this State through their organized government. The people are represented by their Legislature and therefore the people, directly or through the Legislature, can modify the manner in which we are permitted to practice medicine. Such modifications are introduced and some passed at each session of the Legislature and these modifications affect directly and indirectly the manner in which we practice medicine. Therefore, to say that we can ignore a

body which controls our entire practice, is to ignore the simple facts of life."

We thoroughly agree with Dr. Kilroy and have been preaching that our members should take a more active part in participating in our city, parish and state politics. It is most regretful that more of our members do not qualify for elective political offices. If this was done, our task to protect the good citizens of our state against the inroads of the many cultists and charlatans, who are always attempting to invade the field of medicine, would be easy.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

PHYSICIAN POPULATION INCREASED IN 1959

The physician population U. S. and its possessions increased 4,769 in 1959. The AMA Council on Medical Education and Hospitals reported in the May 28 **Journal.** The increase of 4,769 results from the licensing of 8,269 new physicians minus approximately 3,500 who died.

Of the 8,269 new physicians, 1,626 were foreign-trained. Of 8,966 applicants for licensure by written examination, 1,162, or 12.9 per cent failed, compared with 8,633 applicants of whom 1,365, or 15.8 per cent, failed in 1958.

Nine schools in the United States had no failures among their graduates in medical licensing examinations last year. The 8,996 examines included 5,845 graduates of approved medical schools in U. S.; 178 of approved medical schools in Canada, 2,766 of 244 faculties of medicine located in countries other than the U. S. and Canada; 22 of medical schools in U. S. which are no longer in existence, and 185 graduates of schools of Osteopathy.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-fourth annual meeting of The New Orleans Graduate Medical Assembly will be held March 6, 7, 8, and 9, 1961, at the Roosevelt Hotel.

The following members have been appointed to serve on the various Standing Committees for this year:

ADVERTISING AND PUBLICITY
Eugene H. Countiss, M. D., Chairman
Dan W. Beacham, M. D., Vice-Chairman

ATTENDANCE
Paul L. Getzoff, M. D., Chairman
E. Addis Munyan, M. D., Vice-Chairman

CLINICAL TOUR
Emmett L. Irwin, M. D., Chairman
Robert A. Robinson, M. D., Vice-Chairman

CONSTITUTION AND BY-LAWS
John F. Oakley, M. D., Chairman
Daniel C. Riordan, M. D., Vice-Chairman

FINANCE
Max M. Hattaway, M. D., Chairman
Ralph M. Hartwell, M. D., Vice-Chairman

HALLS AND SCREENS
Samuel R. Staggers, M. D., Chairman
William R. Arrowsmith, M. D., Vice-Chairman

HOSPITALS
O. R. Depp, M. D., Chairman
Robert C. Lancaster, M. D., Vice-Chairman

HOTELS
J. Morgan Lyons, M. D., Chairman
Brown C. Mason, M. D., Vice-Chairman

MEDICAL MOTION PICTURES
C. Richard Walters, M. D., Chairman
Paul T. DeCamp, M. D., Vice-Chairman

PRINTING
J. Durel Landry, M. D., Chairman
Frederick F. Boyce, M. D., Vice-Chairman

RECEPTION
Charles L. Brown, M. D., Chairman
John T. Sanders, M. D., Vice-Chairman

REGISTRATION
Val H. Fuchs, M. D., Chairman
P. L. Querens, M. D., Vice-Chairman

ROUND-TABLE LUNCHEONS
William W. Frye, M. D., Chairman
H. Reichard Kahle, M. D., Vice-Chairman

TECHNICAL EXHIBITS
J. Theo Brierre, M. D., Chairman
Richard L. Buck, M. D., Vice-Chairman

TELEPHONE AND TRANSPORTATION
Robert C. Kelleher, M. D., Chairman
Charles R. Robinson, M. D., Vice-Chairman

ANNOUNCEMENT FOR GENERAL PRACTITIONERS AND INTERNISTS

Applications for Charter Membership in the American Society of Diagnostic Radiology are now being received. Membership is open to GENERAL PRACTITIONERS and INTERNISTS **who do or may desire to do some types of Diagnostic Radiology in their offices.**

For further information please write Louis Shattuck Baer, M. D., F.A.C.P., 411 Primrose Road, Burlingame, Calif.

THE VAN METER PRIZE AWARD FOR 1961

The American Goiter Association, Inc., again offers the Van Meter Prize Award of 300.00 to the essayist submitting the best manuscript of original and unpublished work concerning "Goiter—especially its basic cause." The studies so submitted may relate to any aspect of the thyroid gland in all of its functions in health and disease. The Award will be made at the Annual Meeting of the Association in the Warwick Hotel, Philadelphit, Pennsylvania, May 3-6, 1961. A place on the program will be reserved for the winning essayist if he can attend the meeting. Where more than one author appears on the manuscript they will be asked to designate a single recipient to receive the award.

The competing essays may cover either clinical or research investigations, should not exceed 3,000 words in length and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, John C. McClintock, M. D., 702 Madison Avenue, Albany 8, New York, not later than January 1, 1961. Manuscripts that do not conform to these requirements will not receive consideration. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

POSTGRADUATE COURE IN OPHTHALMIC SURGERY

The Department of Ophthalmology, Emory University School of Medicine, will sponsor a postgraduate course in ophthalmic surgery to be held on December 1 and 2, 1960, in the auditorium of the Grady Memorial Hospital, Atlanta, Georgia.

Dr. Frank D. Costenbader, Senior Attending and Chairman of the Department of Ophthalmology, Children's Hospital, and Senior Attending Ophthalmologist, Washington Hospital Center, Washington, D. C.; Dr. John M. McLean, Professor of Ophthalmology, Cornell University School of Medicine, New York, New York; and Dr. Harold G. Scheie, Professor of Ophthalmology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, will be the guest lecturers.

Diagnostic principles and techniques, preoperative and postoperative management, and surgical principles and techniques in extraocular muscle surgery, cataract surgery and glaucoma surgery will be discussed by this distinguished faculty.

CANCER SEMINAR

The Ninth Annual Cancer Seminar of the Arizona Division, American Cancer Society, will be held January 12, 13, and 14, 1961, Tidelands Motor Inn, Tucson.

The theme will be "Changing Concepts in Tumor Formation and Therapy." This meeting is to be devoted to the various aspects of chemotherapy, virology, endrocrinology, environmental factors, etc., as they relate to tumor formation or the therapy for tumors.

TRAINING GRANTS RECEIVED BY TULANE DOCTORS

Dr. Cyril Phillips, director of the child psychiatry program at Tulane University, New Orleans, Louisiana, and Dr. Nina R. Lief, chief resident in child psychiatry at Tulane, have received $300.00 in-service training grants from the Southern Regional Education Board under its program in mental health training and research.

They will visit the National Institute of Mental Health in Bethesda, Maryland, and universities in Maryland, Virginia, and North Carolina to observe training programs in child psychiatry.

Individual grants up to $500 are available to any employee of a mental health outpatient clinic, mental health center, state commission or division of mental health in any of the 15 states supporting the SREB's mental health program. A $76,000 grant to SREB from the National Institute of Mental Health supports the program.

Purpose of the grants is to give mental health personnel a chance to visit and observe new or different methods of operation in other states,

to help them improve their own programs.

Applications for grants are now being accepted by SREB. There is no deadline for applications, since they will be acted upon as received. Persons interested in the grants should write to Southern Regional Education Board, 130 Sixth Street, N. W., Atlanta 13, Ga.

MEPROBAMATE USERS INTOXICATED BY SMALL AMOUNT OF ALCOHOL

Persons taking meprobamate, a relaxing drug, should be warned that alcoholic drinks can have a greater effect on them.

This is the conclusion drawn by a group of researchers at Madison State Hospital, Madison Ind., from a study reported in the Aug. 20 Journal of the American Medical Association.

Meprobamate, sold under the trade names of Miltown, Equanil, Meprospan, and Meprotabs, is prescribed for tension and insomnia among other ills.

"There was more effect on human performance and judgment from a combined dosage of meprobamate and alcohol than from either of these drugs taken singly," the authors reported.

"Results indicate that physicians prescribing meprobamate should warn patients of the greater effect from drinking alcoholic beverages while taking the drug—especially if they are likely to operate motor vehicles or other complex machinery."

They said "small amounts of alcohol . . . were shown to significantly impair performance and judgment when combined with meprobamate."

Ten men and 12 women volunteers took part in the study. For a week before the experiment, the subjects took tablets containing 400 milligrams of meprobamate four times a day, a common dosage.

In the experiment, they underwent a battery of eight psychological tests on different days under four experimental conditions: (1) after taking an innocuous drink, (2) after a drink containing only meprobamate, (3) after a drink containing only alcohol, and (4) after a drink containing meprobamate and alcohol.

The alcohol administered was enough to produce about a 0.05 per cent blood alcohol level.

"This level is not sufficient to impair automobile driving ability according to a number of United States court decisions," the researchers pointed out.

The psychological tests showed, with few exceptions, the "worst performances" were turned in by the subjects under the influence of both meprobamate and alcohol.

"According to the clinical judgments of two of the experimenters, the combination of alcohol with meprobamate produced more intoxication effects than the alcohol alone in 16 of the 22 cases," the authors said.

"On the day of the combined drug dosage, four of the subjects were quite obviously drunk. They showed marked muscular incoordination and little or no concern for the social proprieties. Nothing approaching this was observed in the alcohol condition."

The experimenters admitted they "were frankly not prepared for the extent of the effects," having noted less behavioral deterioration in a similar experiment with alcohol and chlorpromazine, generally considered a stronger drug.

The meprobamate study indicates a possible potentiating effect on alcohol, they concluded.

The authors of the article are George A. Zirkle, Ph.D.; Ott B. McAtee, M. D., and Peter D. King, M. D., all of the state hospital, and Sgt. Robert Van Dyke, Indiana State Police.

CHICKENPOX CAN BE FATAL IN ADULTS

Chickenpox in adults is "a potentially fatal disease," a Texas physician warned. Writing in the July 2 Journal of the American Medical Association, Dr. Stewart A. Fish of Dallas said it has become evident that chickenpox, which is usually a mild childhood disease, may cause severe complications and death in adults.

Dr. Fish reported four fatal cases of chickenpox occurring during pregnancy. In three of the cases, the mothers were exposed to the disease by their children. In all four cases, the disease affected the lungs and other parts of the body.

However, he said, "there is apparently no specific tendency or increased susceptibility to chickenpox during pregnancy."

In 66 cases of disseminated chickenpox reported since 1942, the sex distribution is fairly equal, he said, and the association with pregnancy is probably coincidental.

The mortality among patients with disseminated chickenpox has been estimated to be between 10 and 30 per cent, he added.

Since there is no drug therapy available which will cure disseminated chickenpox or modify its course once the lungs and other parts of the body are involved, Dr. Fish urged early hospitalization of patients with disseminated chickenpox.

IDEAL DRUG FOR REDUCING HINGES ON RESEARCH

Will power is still more potent than any drug to curb overeating and probably will remain so until the appetite mechanism of man is better understood.

This is the conclusion drawn by Dr. Walter Modell, director of clinical pharmacology, Cornell University Medical College, New York, in a

report on the "Status and Prospect of Drugs for Overeating" to the Council on Drugs of the American Medical Association.

"Drugs which give assistance along the lines now available provide short-lived symptomatic relief only," according to Dr. Modell's report published in the July 9 Journal of the A.M.A.

"These seem to be useful only as adjuvants to a carefully controlled diet and, in many cases, some sort of psychotherapy.

"Total therapy must consider the psychosocial aspects of eating patterns and the desire to lose weight, as well as the specific psychological or physiological disturbance which has brought on the hyperphagia (overeating).

"In virtually every instance, motivation for losing weight as well as the psychological reasons for overeating are important considerations in determining the therapeutic regimens which are likely to be effective and to lead to sustained benefits.

"If more were known about the normal appetite mechanism, perhaps something more rational and lasting could be done about it pharmacologically. However, although we have many hypotheses, neither the central site nor the precise mechanisms of normal appetite control are yet definitely established."

Dr. Modell said studies indicate that man has a natural tendency to maintain a balance between caloric intake and energy output, adding:

"The eating patterns of most modern human adults, however, are so distorted that appetite drive and specific food selection appear to have little to do with energy and metabolic requirements."

The culture one lives in has a strong effect on eating habits, he said, and in our present society "social protocol also complicates matters."

"The business luncheon with cocktail, the before-meal highball or two or three, the with-highball canapes, all are part of the mores which consider the slim figure desirable but provides eating customs which make it hard to achieve," he said.

"Although hereditary predisposition appears to be important in some persons, this is often difficult to distinguish from culturally based obesity. Genetic, glandular, and other physical and physiological causes play a statistically small role in obesity, probably in less than 10 per cent of all cases."

Whereas obesity is a consequence of a variety of nonrelated causal factors, Dr. Modell said, there are no drugs to produce loss of appetite "to fit specific disturbances in eating patterns, and there are no useful depressants of the appetite center, wherever it may be."

A large part of Dr. Modell's report was devoted to an examination of stimulating drugs, such as the amphetamines or "pep pills," which he termed the "mainstay" of current pharmacotherapy for obesity.

In the use of this group of drugs, the patient's abnormal drive for food is distracted by a sense of well-being or "lift."

However, he said, these drugs "do not produce appetite suppression in obese persons sufficiently to make them lose weight without simultaneous dietary control."

Undesirable effects caused by stimulants have limited their use, he pointed out, and have thus far appeared to be indivisible from their power to curb the appetite.

Relatively few cases of acute poisoning and serious reactions have been reported as a result of their present large-scale and continued use, he said. However, he warned that they are "not innocuous" and may cause restlessness, excitement, depression, irritability, exhaustion, headache, dizziness, heartburn, nausea, vomiting, and diarrhea.

Habituation has been reported after the continued use of some members of this group, he said, and therefore, are not desirable for prolonged therapy.

Dr. Modell also was critical of phenylpropanolamine which can be sold without prescription and is used in such products as Regimen tablets, Di-Dol, and Rx 121.

"Although there is some evidence that if phenylpropanolamine is given in large enough dosage it will induce some anorexia (loss of appetite), a recent study . . . indicates that, in the usual doses found in these remedies (25 mg. or less), it is no more effective than a placebo," he said.

"In any event, it is likely that, if doses were used which induced anorexia, difficulties would arise due to elevation of blood pressure."

Dr. Modell made these additional points:

—Since an emotional disturbance of some sort is the basis of overeating in many persons, sedation and tranquilization may possibly assist in depression of appetite.

—Bulk has long been suggested as a means of satisfying the appetite of the obese. Unfortunately, cabbage, lettuce, and other articles of the typical grassy, high-bulk, low-calorie diet do not appeal to the average overeater who perversely prefers to distend his stomach with undiluted fat, protein, and carbohydrate.

—Many expensive obesity "cures" depend on an exhibition of weight loss to entice the patients into continuing treatments, especially in expensive salons. Cathartics, diuretics, and salt restriction are often used in such schemes, for, through dehydration, they induce some weight loss very promptly. However, in the obese patient, weight loss by water excretion is both meaningless and senseless. It does not represent a loss of fat.

—There is no reason to believe that vitamins, minerals, or sweets (e.g. Ayds, R.D.X.), containing nutritional elements, have any merit in the treatment of obesity. "Weight loss through the use of such unscientific preparations can only be excellent proof of the importance of the psychogenic elements involved and of the effectiveness of suggestive advertising."

SABIN URGES NATION TO SEEK END OF POLIO BY NEXT SUMMER

Dr. Albert B. Sabin, developer of the live polio-virus vaccine that bears his name, urged that an attempt be made to eliminate polio in the United States before next summer.

In an editorial in the July Archives of Internal Medicine, published by the American Medical Association, Dr. Sabin said:

"The laboratory and field experiences with the oral poliovirus vaccine strains that I selected are now available for decisive judgment, and two American pharmaceutical companies expect to have the required number of successive lots of vaccine produced under the safeguards specified by the National Institutes of Health by autumn of 1960.

"The question now remains whether the health authorities and physicians of the United States are ready to take the necessary steps for an attempted elimination of poliomyelitis from the country before the summer of 1961 or whether the country will continue to pay the high current price for only partial prevention of the paralytic disease?"

The Public Health Service has delayed licensing the Sabin vaccine pending "evidence of safety and lack of significant reversion to virulence," according to a statement by Surgeon General Leroy Burney last December.

Since the Sabin vaccine is produced from live virus strains that are weakened until harmless, it was feared that the viruses might regain their power to cause the disease after the vaccine is administered.

In this connection, Dr. Sabin cited fields tests in Estonia and Lithuania as "the best obtainable field experience not only on the safety of the vaccines used but also on their effectiveness in the elimination of paralytic poliomyelitis."

In these field trials, he said, vaccination of 50 to 60 per cent of the most susceptible age groups was completed before the summer of 1959.

The naturally occurring polioviruses in the unvaccinated group as well as those emanating from the hundreds of thousands of susceptible persons infected by contact with the vaccinated group had an opportunity to spread during the summer period when there has always been an increase in the number of polio cases, he said.

A thorough followup of the results of the vaccination program showed an absence of the summer increase as well as an "unprecedented reduction in the incidence of poliomyelitis in the entire population" of the two republics, he said.

Dr. Sabin said these field trials were "a reasonable basis for the attempt to eliminate completely paralytic poliomyelitis and its causative viruses by feeding the vaccine to almost all susceptibles in a population."

Such an eradication program has been carried out in Hungary where almost all children from two months to 14 years of age have been vaccinated, he said, and similar programs are now in progress in Russia and Czechoslovakia.

"In order to rob the naturally occurring paralytogenic polio viruses (viruses that cause paralytic polio) of the soil on which they grow, it would be necessary, in a country like the U.S.A., to feed the oral vaccine within a relatively short period of time during the winter and spring months to most preschool and school-age children, regardless of the number of doses of Salk vaccine they might have had," Dr. Sabin said.

"The relative cheapness of the oral vaccine and the ease of its administration should permit community-wide programs that would make the vaccine available to all without reference to ability to pay. This would provide a means of protecting not only the individual but also the community."

BOOK REVIEWS

A Practical Guide to General Surgical Management; by Julian A. Sterling, M. D., New York, N. Y., Vantage Press, 1959, pp. 67. Price $3.00.

In this concise manual, Dr. Sterling has set down the working rules that have evolved over the past several years in the surgical service at the Albert Einstein Medical Center in Philadelphia. While this book is intended to help orient the interns and new residents, the rational approach to everyday hospital problems can be reviewed with great benefit by all physicians.

While the book has the obvious drawbacks of dogmatism imposed by brevity and certain rules

that have only a local application, I believe this book would be a worthwhile investment for all hospitals. Certainly if all interns and residents were furnished a copy and referred to this manual our patients would receive better care and all hospitals would function much more efficiently.

ROBERT F. RYAN, M. D.

I Prescribe Laughter; by Thomas Ridhard Rees, M. D., New York, Vantage Press, 1960, pp. 111. Price $2.75.

This is a book of jokes, limericks and amusing slips of the pen apparently culled from many sources. There are no cartoons. It should do in the waiting room and might serve as a source to spice up your staff meeting remarks.

NORMAN C. WOODY, M. D.

Nutritional Diagnosis; by Grace A. Goldsmith, M. D., Springfield, Ill., Charles C Thomas, 1959, pp. 180. Price $5.50.

This book, one of the American Lecture Series, deserves a place on the shelf of every physician and medical student. The diagnosis of nutritional disease is discussed in the lucid, straightforward manner for which Dr. Goldsmith has become noted in her other scientific publications in the past. Sections are devoted to caloric, protein, carbohydrate lipid, mineral and vitamin nutrition. These are preceded by a section on general observations which furnishes an excellent guide to history taking, physical examination, dietary evaluation, and laboratory procedures used in nutritional diagnosis.

The text is supplemented by excellent tables and figures, and a complete and definitive bibliography of one hundred and sixty references. In comparison with other publications in this field, brevity with completeness and clarity of presentation recommend this volume highly.

WALTER G. UNGLAUB, M. D.

The Story of Dissection; by Jack Kevorkian, M. D., New York, Philosophical Library, pp. xii (not numbered) + 80, ill. 16. Price $3.75.

The jacket blurb describes this little book ineptly: "An enthralling account of the often weird and peculiar methods used in dissection of the animal and human body from antiquity to the days of Puritanism, together with the various taboos and superstitions connected with such enterprises." The book is not enthralling, it deals hardly at all with methods of dissection, and its coverage extends to the 20th century; but the account does touch upon taboos and superstitions associated with the dead human body. The author's purpose, as stated in the *Introduction*, was to trace the evolution of attitudes toward dissection in company with the history of views of human values, of superstitions, and of philosophy. In the brief concluding chapter he writes: "We have traced the thread of human dissection through the fabric of history in a crude fashion. In the course of this journey we tried to unravel the multifarious fibrils which make up the thread, which through a qualitative diversity at each locus produced the nuances of continuity so lucidly displayed." To this reviewer, the "thread" and its "fibrils" appear through the overlay of wordage only obscurely and in a tangle.

HAROLD CUMMINS, Ph. D.

Current Therapy—1960; by Howard F. Conn, M. D. (ed.), Philadelphia, Pennsylvania, W. B. Saunders, Co., 1960, pp. 808. Price $12.00.

The 1960 edition of *Current Therapy*, edited by Dr. Conn with 12 consulting editors and many contributors continues to fill its stated need for "information in a form consistent with ready reference and practical application" in the field of Therapeutics.

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NORMAN S. GILBERT, M. D.

PUBLICATIONS RECEIVED

Landsberger Medical Books, Inc., N. Y.: Cardiac Emergencies and Related Disorders; Their Mechanism, Recognition and Management, by Harold D. Levine, M. D.

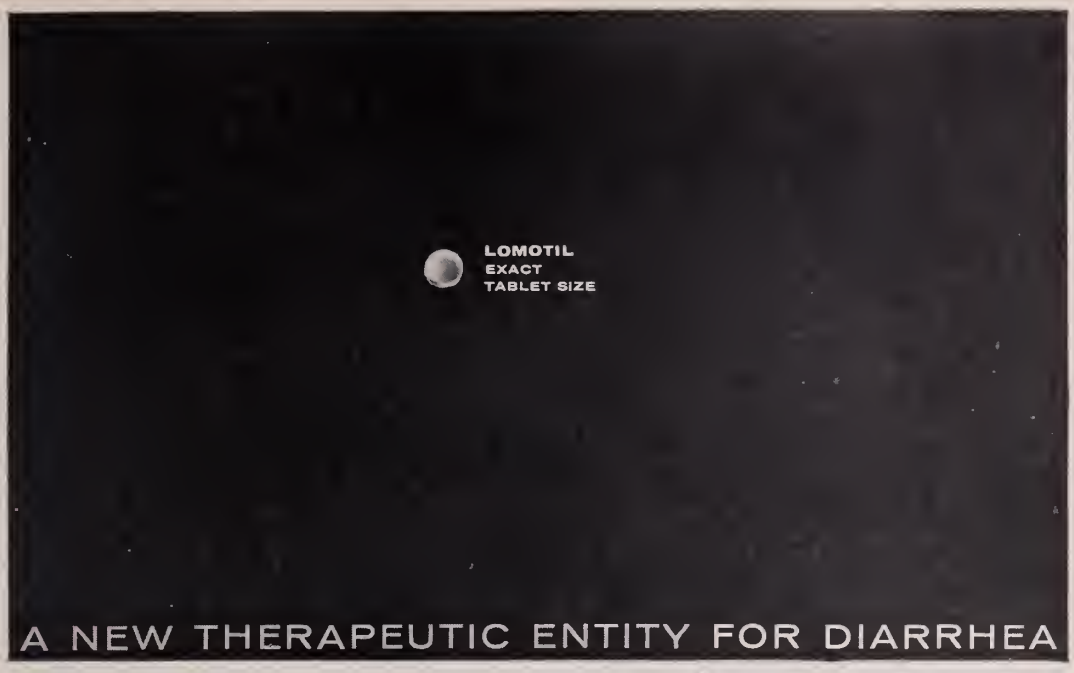
Lange Medical Publications, Los Altos, Calif.: Review of Medical Microbiology, by Ernest Jawetz, M. D. (4th edit.); Handbook of Medical Treatment, edited by Milton J. Chatton, M. D., Sheldon Margen, M. D., and Henry Brainerd, M. D. (7th edit.).

The C. V. Mosby, Co., St. Louis: Synopsis of Pathology, by W. A. D. Anderson, M. D. (5th edit.).

W. B. Saunders Co., Phila.: Obstetrics, from the original text of Joseph B. De Lee, M. D., by J. P. Greenhill, M. D. (12th edit.).

Charles C Thomas, Publisher, Springfield, Ill.: Chemical Osteosynthesis in Orthopaedic Surgery, by Michael P. Mandarino, M. D.; The Pharmacology of Anesthetic Drugs, by John Adriani, M. D. (4th edit.).

John Wright & Sons Ltd., Bristol, Eng.; The Modern Treatment of Asthma With Special Reference to Gold Therapy, by L. Banszky, M. D. (2nd edit.).



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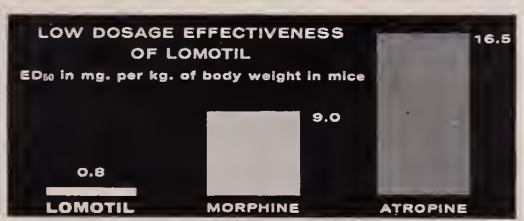
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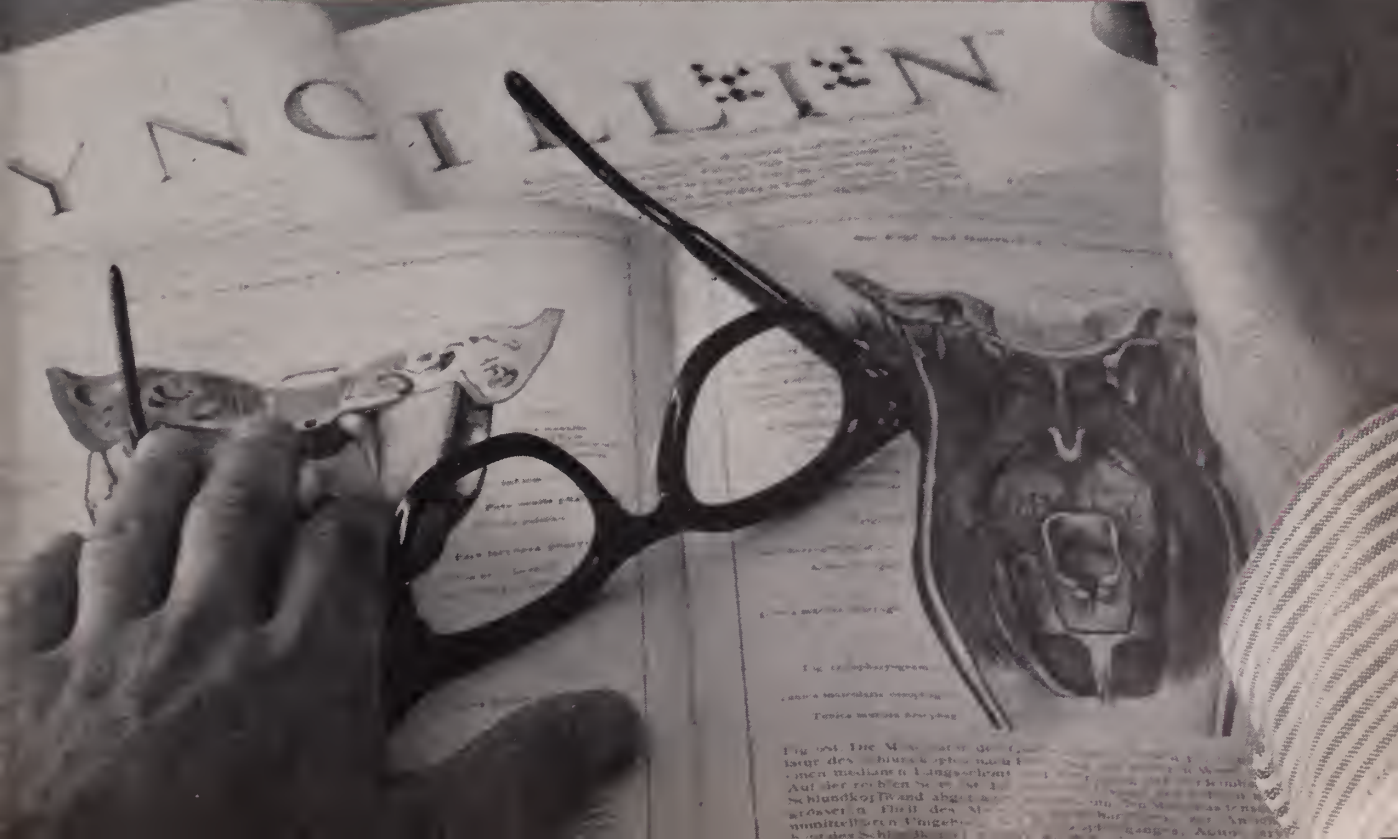
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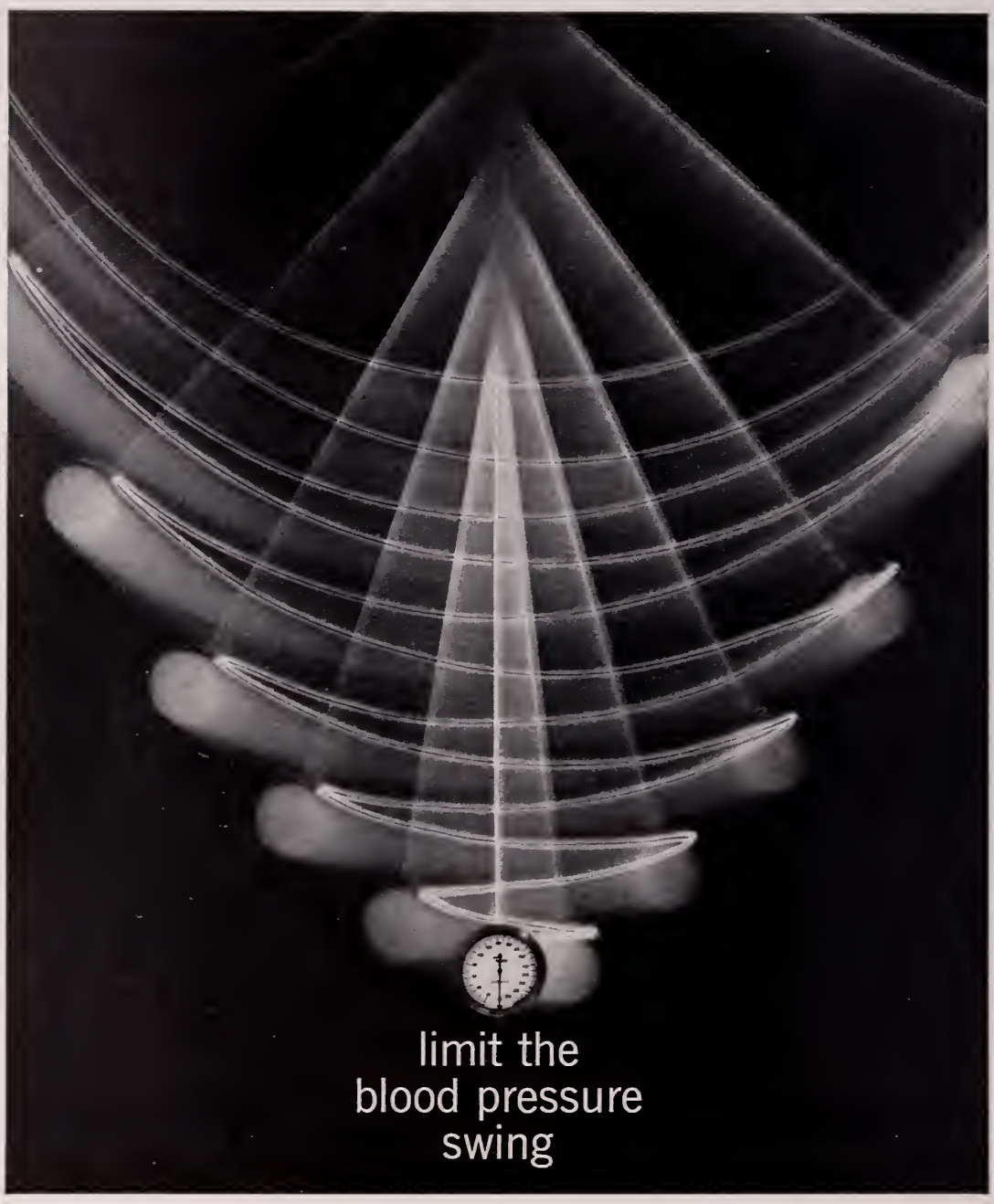
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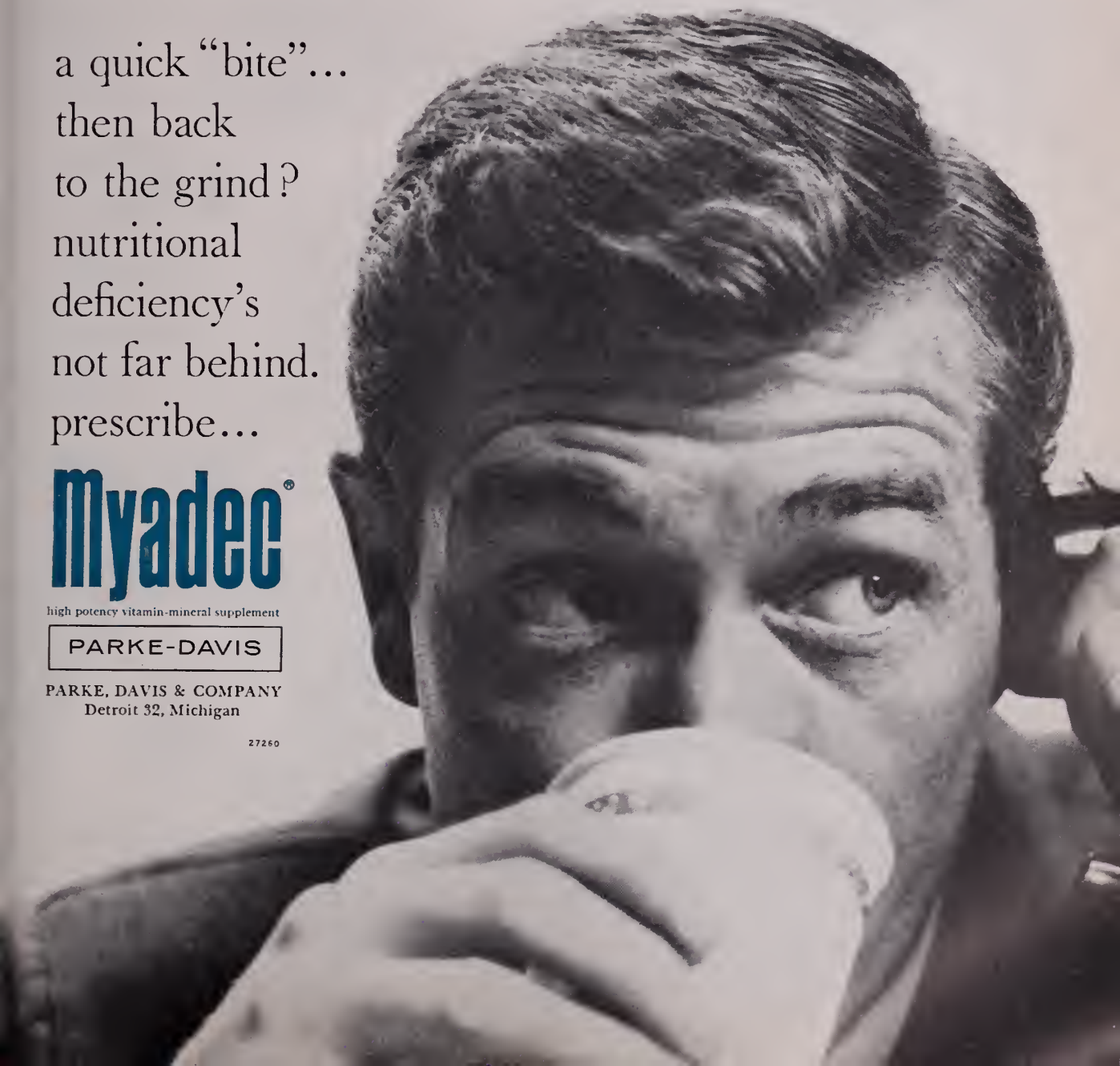
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Psychiatrist-in-Chief
American Board Certified
Member American Psychiatric Association

Specialized treatments in mental disorders and alcoholic and drug addictions.

A limited number of custodial cases accepted.

Fireproof Buildings
Lovely Gardens and Grounds
Healthful Location — All Private Rooms
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"The Hospital Atmosphere is Avoided"

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Prompt, Dependable Service on Diagnostic Reagents manufactured by Warner-Chilcott who for over a century have been serving the Medical Profession with Diagnostic Agents and Pharmaceuticals developed through the finest research.

In stock for immediate shipment to you: Simplastin — Diagnostic Plasma — Phosophatabs — Transaminase — Versatol — Fibrinogen — Thromboplastin — Ketodase — and the new UROGRAPH.

PEACOCK
SURGICAL COMPANY INC.
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SHREVEPORT, LOUISIANA

CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

n rheumatoid arthritis with serious corticoid side effects. Following profound weight loss and acute g.i. distress on prednisolone, a 45-year-old bookkeeper with a five-year history of severe arthritis was started on DECADRON, 1 mg./day. Dosage was promptly reduced to 0.5 mg./day. After ten months on DECADRON, she gained back eleven pounds, feels very well, and had no recurrence of stomach symptoms. She is in clinical remission.*

New convenient b.i.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.i.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.i.d. or q.i.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

From a clinical investigator's report to Merck Sharp & Dohme.

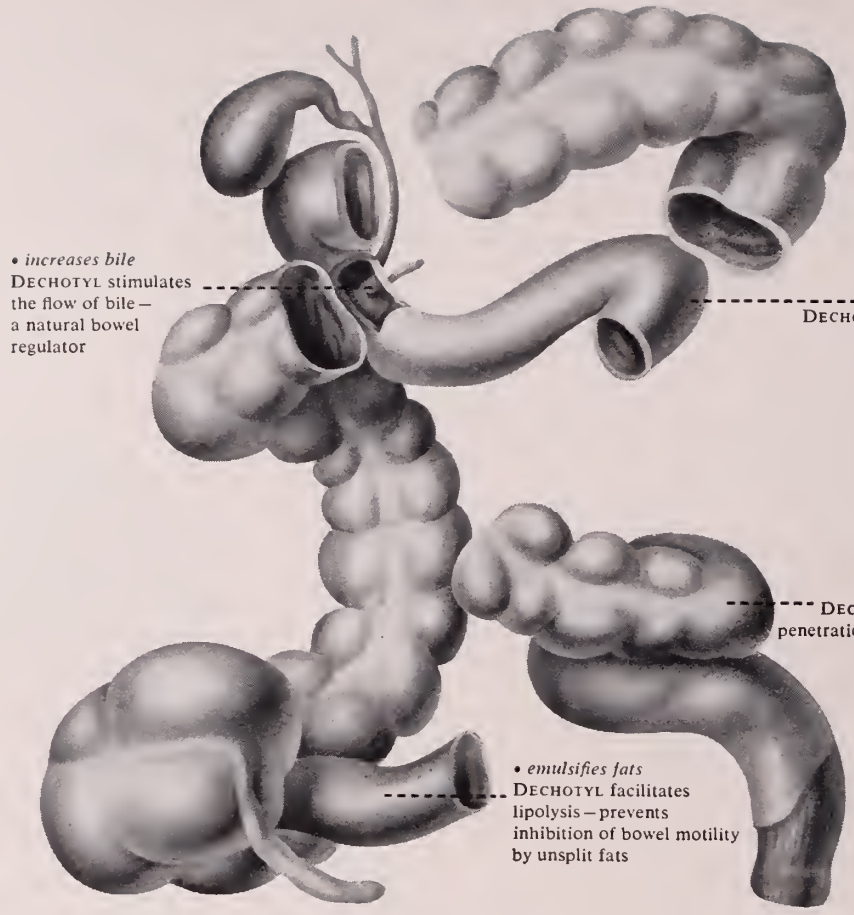
Decadron®

Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

MSD MERCK SHARP & DOHME • Division of Merck & Co., Inc., West Point, Pa.





helps free your patient from both... constipation and laxatives

DECHOTYL®

TRABLETS*

well tolerated...gentle transition to normal bowel function



Recommended to help convert the patient—naturally and gradually—to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two TRABLETS at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* TRABLETS *3 or 4 times daily.*

Contraindications: Biliary tract obstruction; acute hepatitis.

DECHOTYL TRABLETS provide 200 mg. DECHOLIN,® (dehydrocholic acid, AMES), 50 mg. desoxycholic acid, and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow TRABLET. Bottles of 100.

*AMES T.M. for trapezoid-shaped tablet.

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

84160

Blood pressure that goes up with stress often comes down with SERPASIL®

(reserpine CIBA)

One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

In mild to moderate hypertension, Serpasil is basic therapy, effective alone "... in about 70 per cent of cases..."*

In severe hypertension, Serpasil is valuable as a primer. By adjusting the patient to the physiologic setting of lower pressure, it smooths the way for more potent antihypertensives.

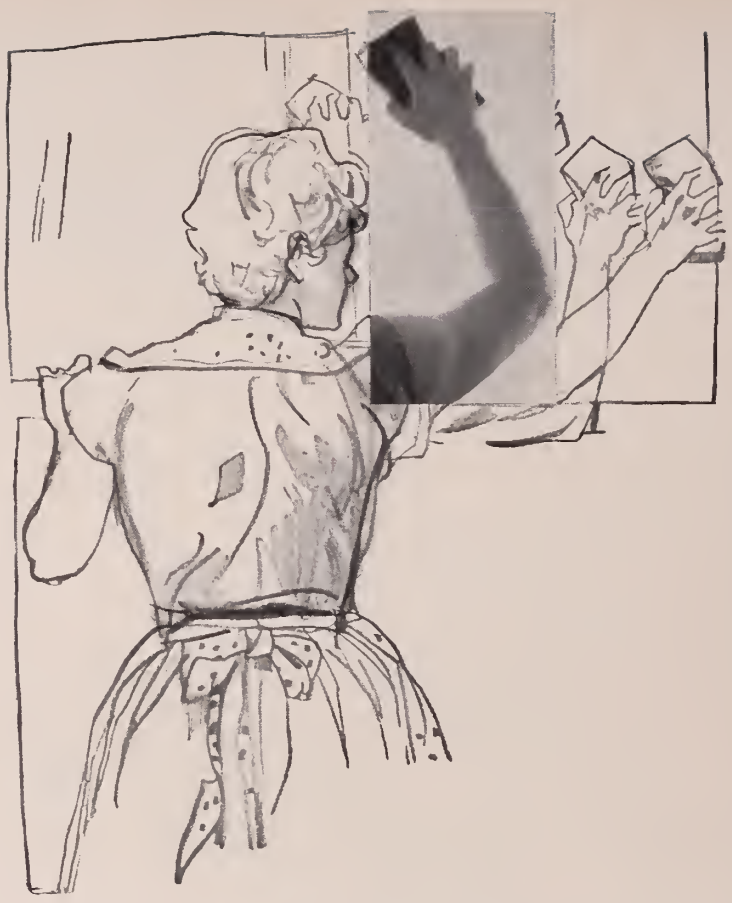
In all grades of hypertension, Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J, A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2830MB

Complete information available on request.





To the relief of musculoskeletal pain, new MEDAPRIN* adds restoration of function

Analgesics offer temporary relief of musculoskeletal pain, but they merely *mask* pain rather than getting at its *cause*. New Medaprin, in addition to bringing about prompt subjective improvement, promotes the *restoration of normal function* by suppressing the inflammation that *causes* the pain.

Medaprin, Upjohn's new analgesic-steroid combination, contains aspirin plus Medrol,** the corticosteroid with *the best therapeutic ratio in the steroid field*.† Instead of suffering recurrent discomfort because of the "wearing off" of analgesics, the patient on Medaprin experiences a smooth, *extended* relief and more normal mobility.

Indications: Medaprin is indicated in mild-to-moderate rheumatic and musculoskeletal conditions, including rheumatoid arthritis, deltoid bursitis, low back pain, neuralgia, synovitis, fibromyositis, osteoarthritis, low back sprain, traumatic wrist, sciatica, and "tennis elbow."

Dosage: The recommended dosage is 1 tablet q.i.d. The usual cautions and contraindications of corticotherapy should be observed.

Supplied: In bottles of 100 and 500.

Formula: Each Medaprin tablet contains

- 300 mg. acetylsalicylic acid, for prompt relief of pain
- 1 mg. Medrol, to suppress the causative inflammation
- 200 mg. calcium carbonate, as buffer

*TRADEMARK **TRADEMARK, REG. U. S. PAT. OFF.—METHYLPREDNISOLONE, UPJOHN
†RATIO OF DESIRED EFFECTS TO UNDESIRED EFFECTS

The Upjohn Company, Kalamazoo, Michigan

Upjohn

"Sometimes, I almost wish I were human so I could clear up this close-up, clogged-up nose of mine with TRIAMINIC®."

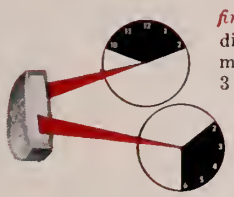


...and for humans with CLOGGED-UP NOSES...

Nasal congestion often persists with "bulldog tenacity." Nose drops and sprays often reach only the more superficial respiratory membranes and therefore fail to provide adequate relief. Furthermore, they may add to the patient's misery by producing rebound congestion, ciliary inhibition, and eventually "nose drop addiction." TRIAMINIC reaches *all* nasal and paranasal membranes *systemically* — provides more complete, longer-lasting relief while it avoids the harmful side effects associated with topical medication.

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



first — the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then — the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
½ the formulation of the Triaminic Tablet.
Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides:
¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults—1 or 2 tsp.; *Children 6 to 12*—1 tsp.;
Children 1 to 6 — ½ tsp.; *Children under 1* — ¼ tsp.

TRIAMINIC®

timed-release tablets, juvelets, and syrup

STOP *running noses* *and open stuffed noses orally*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Why diet is preferable to drugs

...in the control of serun

The objective of therapy is the approximation of the physiological norm.

This is most satisfactory when it can be accomplished by dietary manipulation. The control of elevated serum cholesterol through relatively simple changes in the dietary pattern of the patient puts nature's own processes to work most effectively to achieve the objectives of treatment.

The dietary approach does more than correct the serum cholesterol problem. Because overweight, together with improper eating patterns, is so often involved, the prescription of corrective diet helps the patient to help himself by establishing sound nutritional practices.

For the prophylaxis and prevention of hypercholestemia, the dietary approach affords the advantages of simplicity and economy. Diet therapy is for the long-term management of a chronic condition, while drug therapy is most efficient for acute situations.

The development of atherosclerosis is a slow process. It is believed that the onset of this condition is in early adulthood, but its clinical symptoms take as many as 20 years to manifest themselves. Simple changes in diet serve to keep the blood cholesterol concentration at an acceptable level.

Dietary therapy has other significant advantages over medication as follows:

1. Dietary adjustment involves little or no expense to the patient, whereas drugs are costly.
2. Dietary therapy may be made with complete safety—even for pregnant females.
3. Dietary therapy produces no side effects, whereas there is not as yet sufficient clinical evidence as to the long-term effects of drugs.
4. Dietary therapy brings about reduction in serum cholesterol through normal body processes, as yet not fully understood. On the other hand, some drugs can leave in the body accumulations of cholesterol precursors.
5. Dietary procedures do not usually generate new compounds in the blood which interfere with the chemical determination of blood serum cholesterol.
6. Dietary therapy offers a solution to the related problems of obesity which drugs do not.

Elevated serum cholesterol has long been linked to an imbalance in the ratio of the type of fat in the diet. Reductions in cholesterol levels have been achieved repeatedly, both in medical research and practice, through control of total calories and through replacement of an appreciable percentage of saturated fat by poly-unsaturated vegetable oil. An important measure in achieving replacement is the consistent use of poly-unsaturated pure vegetable oil in food preparation in place of saturated fat.

* * *

Poly-unsaturated Wesson is unsurpassed by any readily available brand, where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen.

ROCK CORNISH GAME HENS—Free Wesson recipes for delicious main dishes, desserts and salad dressings are available for your patients. Request quantity needed from The Wesson People, Dept. N, 210 Baronne St., New Orleans 12, La.

More acceptable to patients. Wesson is preferred for its supreme delicacy of flavor, increasing the palatability of food without adding flavor of its own.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50%. Only the lightest cottonseed oils of high iodine number are selected for Wesson, and no significant variations are permitted in the 22 exacting specifications required before bottling.

Economy. Wesson is consistently priced lower than the next largest seller.

Wesson's Important Constituents

Wesson is 100% cottonseed oil . . . winterized and of selected quality

Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytosterol (Predominantly beta sitosterol)	0.3-0.5%
Total tocopherols	0.09-0.12%

Never hydrogenated—completely salt free

cholesterol





Bed of Digitalis purpurea
with Campanula (Canterbury Bells) in foreground

Not far from here are manufactured
from the powdered leaf
Pil. Digitalis (Davies, Rose)
0.1 Gram (1½ grains) or 1 U.S.P. Digitalis Unit.
They are physiologically standardized,
with an expiration date on each package.
Being Digitalis in its completeness,
this preparation comprises the
entire therapeutic value of the drug.
It provides the physician with a safe and effective
means of digitalizing the cardiac patient
and of maintaining the necessary saturation.
Security lies in prescribing the
"original bottle of 35 pills, Davies, Rose."

Clinical samples and literature sent to physicians on request

Davies, Rose & Co., Ltd. Boston 18, Mass.

D 17



in infectious disease[17,22,30,35]
in arthritis[18,19,20,29]
in hepatic disease[2,3,4,5,38]
in malabsorption syndrome[1,2,8,27]
in degenerative disease[6,7,19,20,40]
in cardiac disease[23,28,29,38,41]
in dermatitis[24,39]
in peptic ulcer[8,21,36]
in neuroses & psychiatric disorders[25,26]
in diabetes mellitus[31,32,33,38]
in alcoholism[9,11,35,37,38]
in ulcerative colitis[10,14,16]
in osteoporosis[13,19,20]
in pancreatitis[15]
in female climacteric[12,34]

Patients with chronic disease deserve the nutritional support provided by

Theragran-M

Squibb Vitamin-Minerals for Therapy

11 vitamins, 8 minerals clinically-formulated and potency protected to provide

enough nutritional support to do some good

with vitamins only

Theragran
also available:

Theragran Liquid
Theragran Junior

Theragran products do not contain folic acid.

1-41 a list of the above references will be supplied on request.

SQUIBB

"THERAGRAN"® IS A SQUIBB TRADEMARK

Squibb Quality—the Priceless Ingredient



Variety is the spice in this diet! Meat patties, peas and carrots, baked potato, gelatin salad, applesauce dessert—and beer.

The secret of a successful bland diet is acceptance

So appetizing (and therefore so acceptable)—broiled meat patties, made tender with crushed corn flakes and water, tasty with salt, savory with a hint of thyme or marjoram. Fish soufflé—delicious when the top is crisped with cracker meal and butter!

Bland but satisfying are asparagus tips, carrots, and peas—served whole if tender, or puréed. Potatoes may be boiled, baked or mashed. Molded gelatin salads are pretty to look at—better to eat. For dessert, how about applesauce added to whipped lime gelatin and topped with custard sauce?



And with your approval, a glass of beer can add zest to your patient's diet

pH 4.3
(Average of American Beers)

United States Brewers Foundation

If you'd like reprints of this and 11 other different diet menus for your patients, write United States Brewers Foundation, 535 Fifth Avenue, N.Y. 17, N.Y.



Lifts depression...as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety...rapidly and safely

Balances the mood – no "seesaw" effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient – *they often aggravate anxiety and tension.*

And although amphetamine-barbiturate combinations may counteract excessive stimulation – *they often deepen depression.*

In contrast to such "seesaw" effects, Deprol's smooth, *balanced* action lifts depression as it calms anxiety – both at the same time.

Acts swiftly – the patient often feels better, sleeps better, within a few days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly – often within a few days. Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely – no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function – frequently reported with other antidepressant drugs.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate. **Supplied:** Bottles of 50 light-pink, scored tablets. Write for literature and samples.

▲Deprol▲®

WALLACE LABORATORIES / *Cranbury, N. J.*

CD-2839



attains
sustains
retains

extra
antibiotic
activity

DEC

attains activity levels promptly

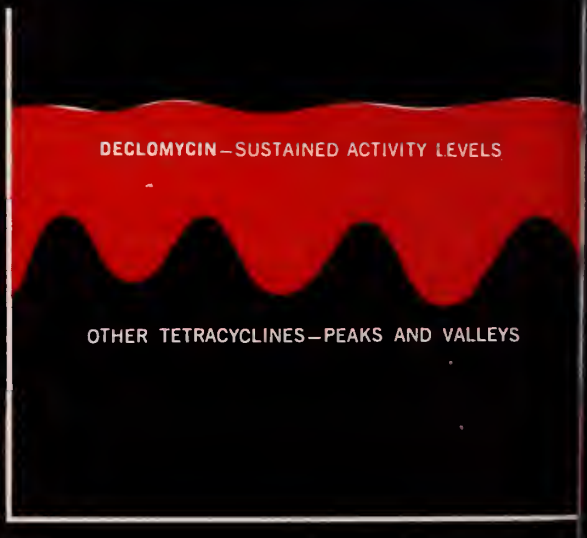
DECLOMYCIN Demethylchlortetracycline attains—usually within two hours—blood levels more than adequate to suppress susceptible pathogens—on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. The average, effective, adult daily dose of other tetracyclines is 1 Gm. With DECLOMYCIN, it is only 600 mg.

sustains activity levels evenly

DECLOMYCIN Demethylchlortetracycline sustai through the entire therapeutic course, the high ac ity levels needed to control the primary infection a to check secondary infection at the original—or another—site. This combined action is usually s tained without the pronounced hour-to-hour, dose dose, peak-and-valley fluctuations which char terize other tetracyclines.



POSITIVE ANTIBACTERIAL ACTION



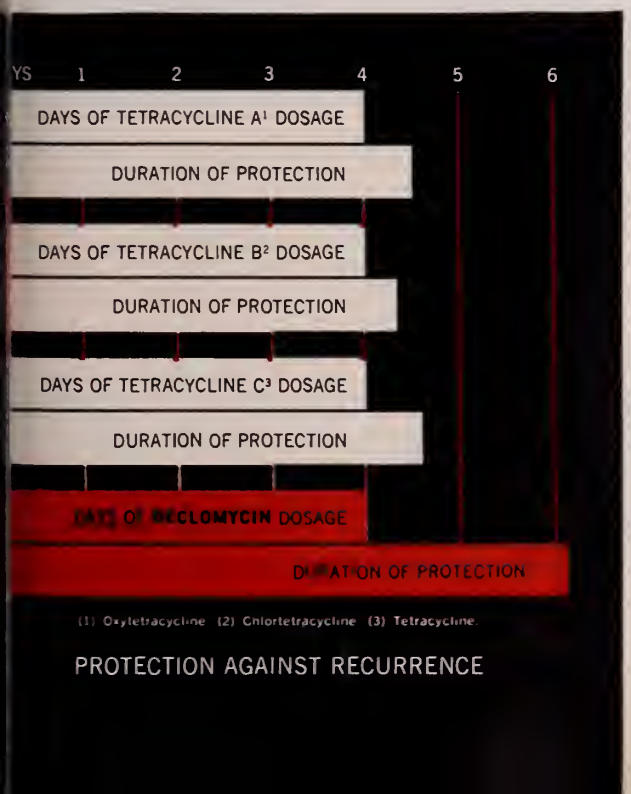
PROTECTION AGAINST PROBLEM PATHOGENS

LOMYCIN®

DEMETHYLCHLORTETRACYCLINE LEDERLE

etains activity evels 24-48 hrs.

ECLOMYCIN Demethylchlortetracycline retains activity levels up to 48 hours after the last dose is ven. At least a full, extra day of positive action may us be confidently expected. The average, daily adult osage for the average infection—1 capsule q.i.d.—the same as with other tetracyclines...but **total** osage is lower and duration of action is longer.



CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. **Dosage:** 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under constant observation.

Lederle

LEDERLE LABORATORIES
A Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York



A biochemical compound used to diminish intestinal gas in healthy persons and those patients having digestive disorders ■

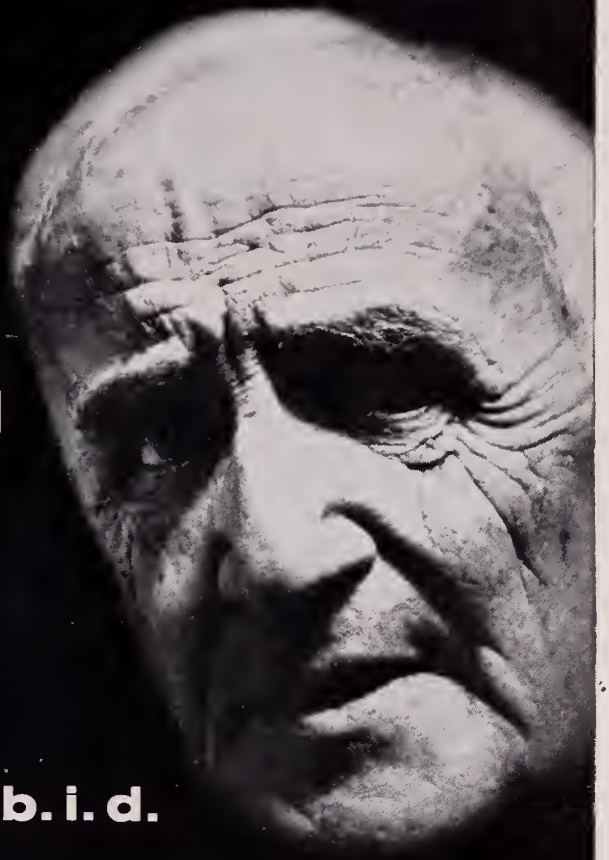
KANULASE

Each Kanulase tablet contains Dorase* 320 units, combined with pepsin, N.F., 150 mg.; glutamic acid HCl, 200 mg.; pancreatin, N.F., 500 mg.; oxbile extract, 100 mg. Dosage: 1 or 2 tablets at mealtime. Supplied: Bottles of 50 tablets.

*DORSEY BRAND OF CELLULASE, EXPRESSED AS DIGESTIVE ACTIVITY UNITS

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

IN SENILE CONFUSION . . .



CONTINUOUS CEREBRAL OXYGENATION

WITH

ONE

Geroniazol TT* b.i.d.

- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio



helping the hypertensive to help himself...

THEOMINAL® R.S.

(Theominal with Rauwolfia serpentina)

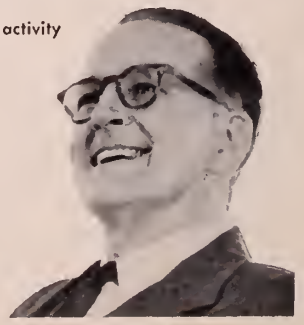
- Gradual but sustained reduction of blood pressure
- Mild bradycardic action
- Alleviation of congestive headache, vertigo, dyspnea
- Relief from anxiety, excitability, insomnia
- Sense of well-being

Theobromine	320 mg.
Luminal®	10 mg.
Rauwolfia serpentina alkaloids (alseroxylon)	1.5 mg.*

DOSAGE: The usual dose of Theominal R.S. is 1 tablet two or three times daily. When improvement has been maintained for a time, the dose may be reduced or medication suspended occasionally until resumption is indicated.

SUPPLIED: Bottles of 100 and 500 tablets.

* = 0.3 mg. reserpine in activity



Winthrop LABORATORIES · NEW YORK 18, N. Y.

Theominal and Luminal (brand of phenobarbital), trademarks reg. U.S. Pat. Off.

for bacterial pneumonias

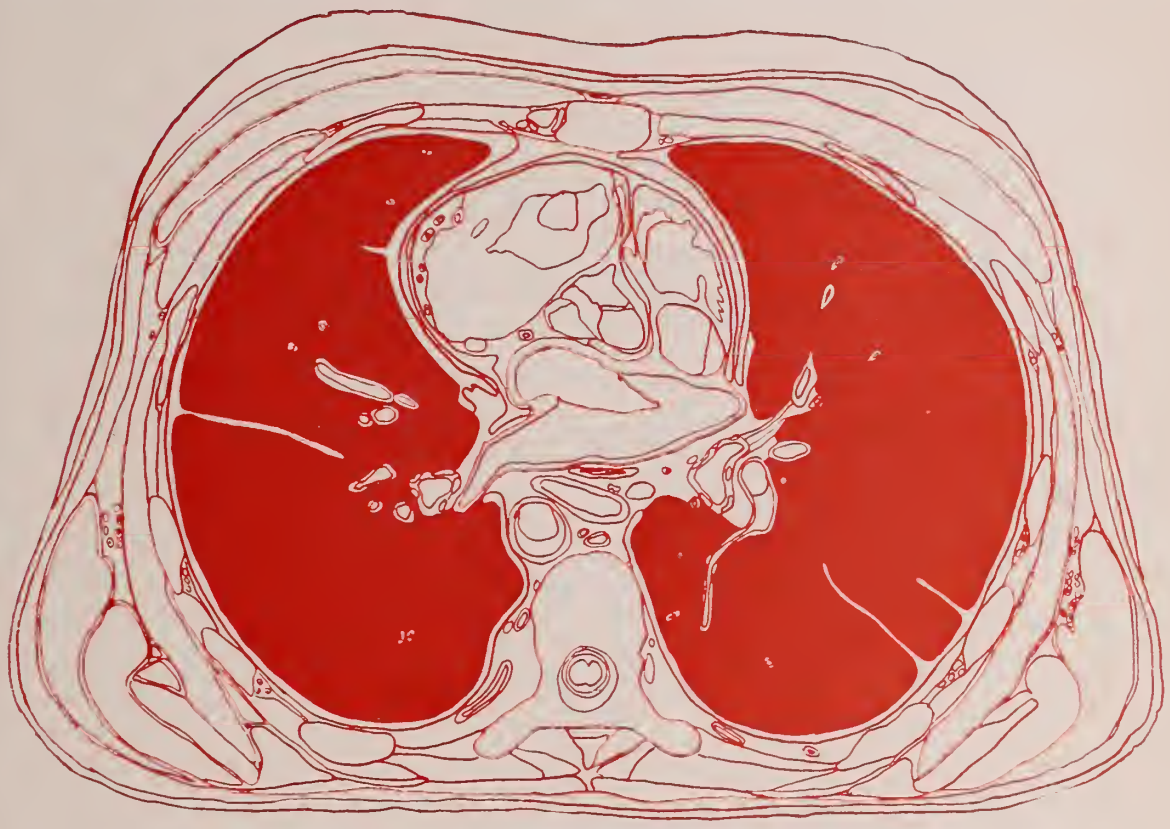
Tetrex®

capsules

The Original Tetracycline Phosphate Complex

U. S. PAT. NO. 2,791,609

effective control of pathogens...with an unsurpassed record of safety and tolerance



BRISTOL LABORATORIES, SYRACUSE, NEW YORK

BRISTOL™

SUPPLY: TETREX Capsules—tetracycline phosphate complex—each equivalent to 250 mg. tetracycline HCl activity. Bottles of 16 and 100.

TETREX Syrup—tetracycline (ammonium polyphosphate buffered) syrup—equivalent to 125 mg. tetracycline HCl activity per 5 ml. teaspoonful. Bottles of 2 fl. oz. and 1 pint.

"Gratifying" relief from

for your patients with
'low back syndrome' and
other musculoskeletal disorders

POTENT muscle relaxation
EFFECTIVE pain relief
SAFE for prolonged use

stiffness and pain

"gratifying" *relief from stiffness and pain in 106-patient controlled study (as reported in J.A.M.A., April 30, 1960)*

"Particularly gratifying was the drug's [SOMA's] ability to relax muscular spasm, relieve pain, and restore normal movement . . . Its prompt action, ability to provide objective and subjective assistance, and freedom from undesirable effects recommend it for use as a muscle relaxant and analgesic drug of great benefit in the conservative management of the 'low back syndrome'."

Kestler, O.: Conservative Management of "Low Back Syndrome", J.A.M.A. 172: 2039 (April 30) 1960.

FASTER IMPROVEMENT—79% complete or marked improvement in 7 days (Kestler)

EASY TO USE—Usual adult dose is one 350 mg. tablet three times daily and at bedtime.

SUPPLIED: 350 mg., white tablets, bottles of 50.
For pediatric use, 250 mg., orange capsules, bottles of 50.

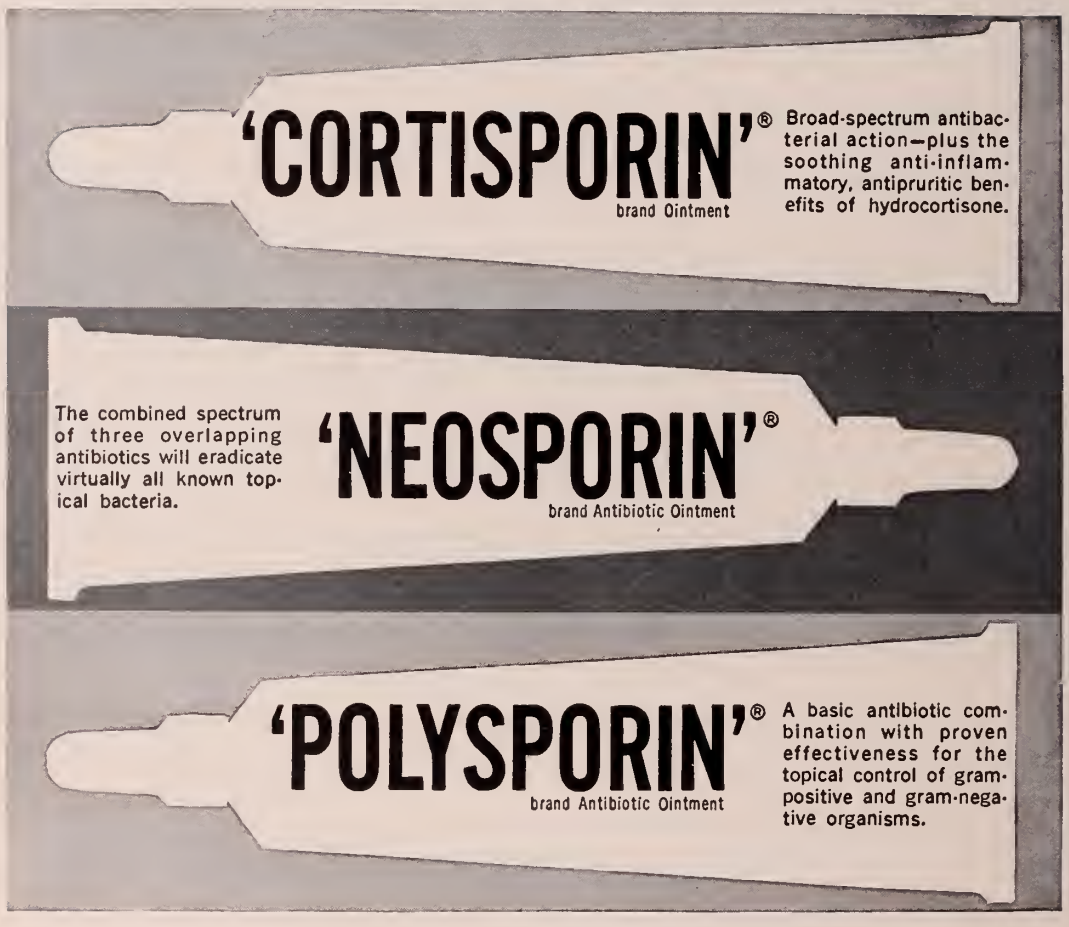
Literature and samples on request.

SOMA®

(CARISOPRODOL, WALLACE)

WALLACE LABORATORIES, CRANBURY, NEW JERSEY

'B. W. & Co.' 'Sporin' Ointments rarely sensitize . . . give decisive bactericidal action for most every topical indication



Contents per Gm.	'Polysporin'®	'Neosporin'®	'Cortisporin'®
'Aerosporin'® brand Polymyxin B Sulfate	10,000 Units	5,000 Units	5,000 Units
Zinc Bacitracin	500 Units	400 Units	400 Units
Neomycin Sulfate	—	5 mg.	5 mg.
Hydrocortisone	—	—	10 mg.
Supplied:	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of 1 oz., ½ oz. and ⅛ oz. (with ophthalmic tip)	Tubes of ½ oz. and ⅛ oz. (with ophthalmic tip)

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

after milk and rest, why Donnalate?

Once you've prescribed milk and rest for a peptic ulcer patient, Donnalate may be the best means for fulfilling his therapeutic regimen. This is because Donnalate combines several recognized agents which effectively complement each other and help promote your basic plan for therapy. A single tablet also simplifies medicine-taking.

in Donnalate: Dihydroxyaluminum aminoacetate affords more consistent neutralization than can diet alone. • Phenobarbital improves the possibility of your patient's resting as you told him to. • Belladonna alkaloids reduce GI spasm and gastric secretion. And by decreasing gastric peristalsis, they enable the antacid to remain in the stomach longer.

Each Donnalate tablet equals one Robalate® tablet plus one-half Donnatal® tablet: Dihydroxyaluminum aminoacetate, N. F., 0.5 Gm.; Phenobarbital (1/8 gr.), 8.1 mg.; Hyoscyamine sulfate, 0.0519 mg.; Atropine sulfate, 0.0097 mg.; Hyoscine hydrobromide, 0.0033 mg.

Donnalate®

A. H. Robins Co. INC.
RICHMOND 20, VIRGINIA





more and more physicians are prescribing this triple sulfa



TERFONYL

Squibb Triple Sulfas (Trisulfapyrimidines)

Clinical experience continues to prove that TERFONYL provides many special advantages fundamental to successful antibacterial therapy.

• specificity for a wide range of organisms • superinfection rarely encountered • soluble in urine through entire physiologic pH range • minimal disturbance of intestinal flora • excellent diffusion throughout tissues • readily crosses blood-brain barrier • sustained therapeutic blood levels • extremely low incidence of sensitization

SUPPLY: Tablets, 0.5 gm. • Suspension, raspberry flavored, 0.5 gm. per teaspoonful (5cc.).

SQUIBB *Squibb Quality—the Priceless Ingredient*

"TERFONYL"® IS A SQUIBB TRADEMARK

contain the bacteria-prone cold

Tain

(Triacetyloleandomycin, Triaminic® and Calurin®)



inner protection with...

safe antibiosis

Triacetyloleandomycin, equivalent to oleandomycin 125 mg. This is the URI antibiotic, clinically effective against certain antibiotic-resistant organisms.

fast decongestion

Triaminic®, 25 mg., three active components stop running noses. Relief starts in minutes, lasts for hours.

well-tolerated analgesia

Calurin®, calcium acetylsalicylate carbamide equivalent to aspirin 300 mg. This is the freely-soluble calcium aspirin that minimizes local irritation, chemical erosion, gastric damage. High, fast blood levels.

TAIN brings quick, symptomatic relief of the common cold (malaise, headache, muscular cramps, aches and pains) especially when susceptible organisms are likely to cause secondary infection. Usual adult dose is 2 Inlay-Tabs, q.i.d. In bottles of 50. ℞ only. Remember, to contain the bacteria-prone cold...TAIN.

SMITH-DORSEY · Lincoln, Nebraska
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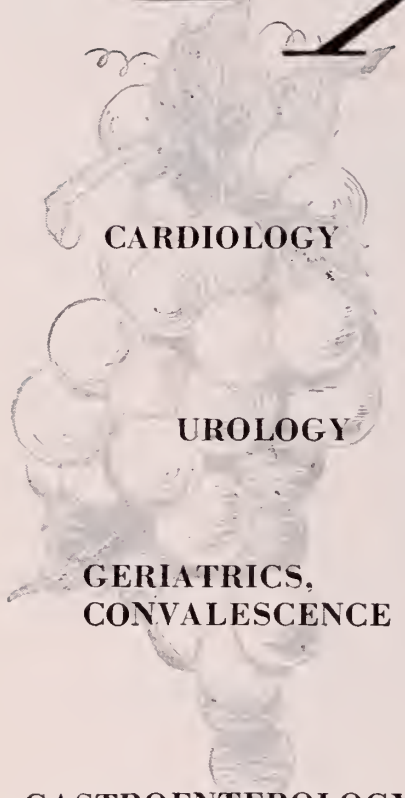
- 300 mg. acetylsalicylic acid, for prompt relief of pain
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- 200 mg. calcium carbonate, as buffer

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February 8-11, 1961

There is probably no other period in life which serves as a meeting ground for so many clinical disciplines as adolescence. This program therefore has been planned by a multi-disciplined committee to meet the needs of all physicians caring for adolescents. By lectures, small group discussions, as well as clinics and conferences with patients, the ways in which the adolescent differs from the child and the adult will be described as a basis for consideration of general medical care, including dermatology, cardiovascular diseases, surgical problems, endocrinology, orthopaedic conditions and last, but very important, emotional difficulties.

SURGERY OF THE FOOT
Dr. Harry D. Morris and Dr. Jack Wickstrom, Co-Chairmen
February 16-18, 1961

This program has been planned at the request of participants in former courses. It will consist not only of an intensive review of the basic anatomy and kinesiology of the foot and lower leg, but also full discussion of the management of trauma and diseases of the foot. Special emphasis will be given to non-operative, as well as operative, management of static conditions of the foot and attention will be directed particularly to reconstructive surgical procedures necessitated by trauma and neuromuscular diseases.

DISEASES OF THE ESOPHAGOGASTRIC JUNCTION
Dr. Oscar Creech, Jr., Chairman
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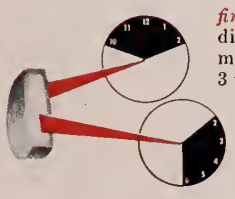
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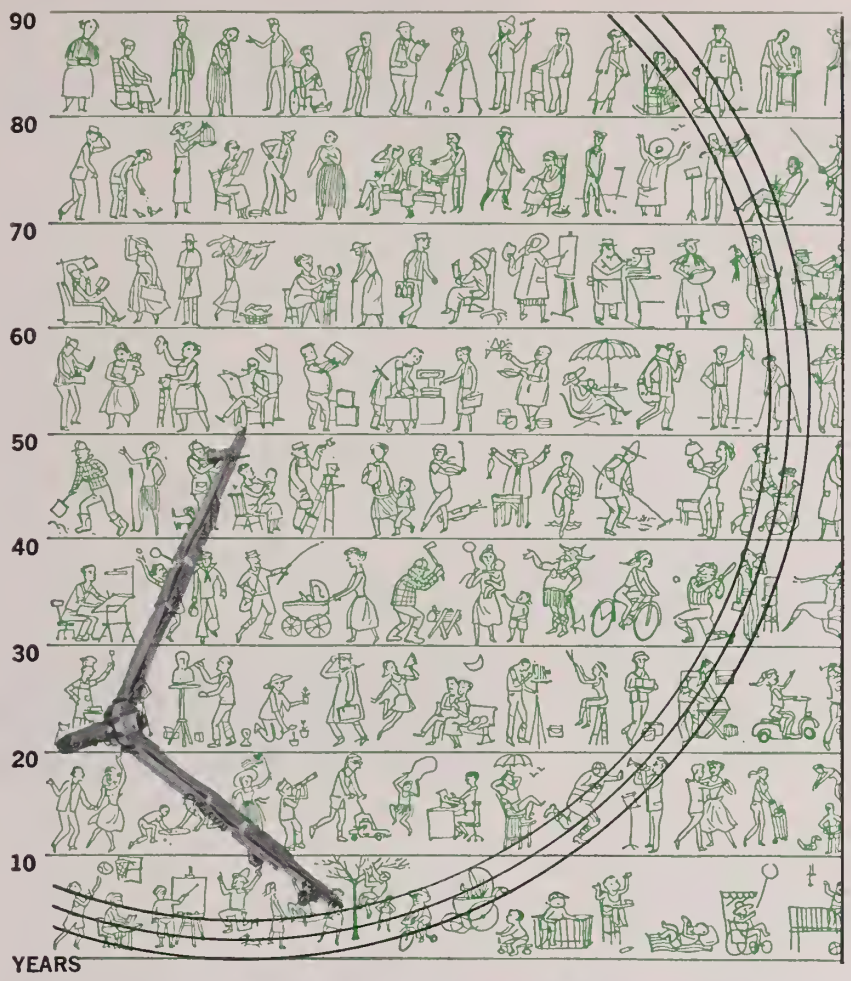
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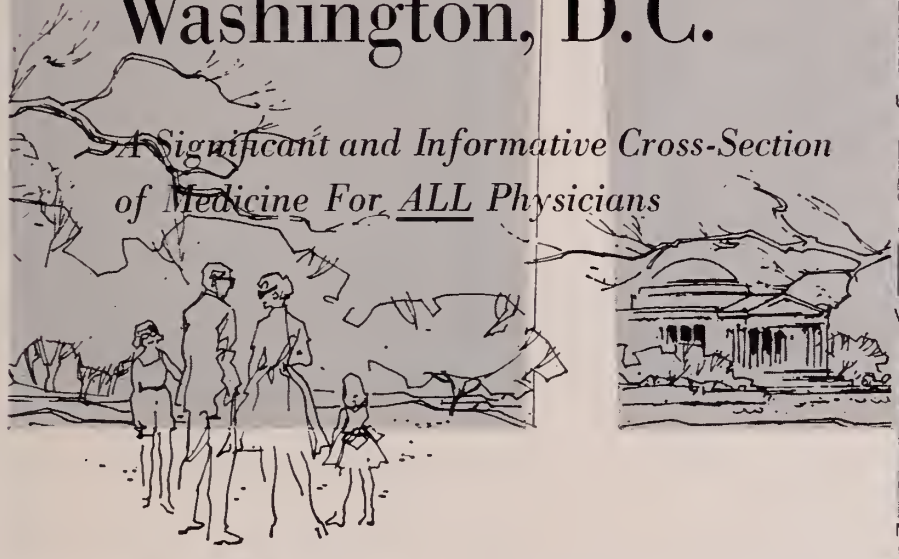
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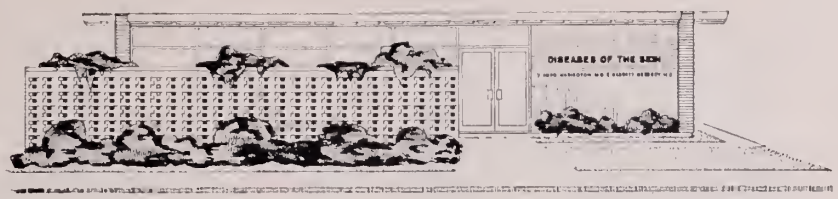
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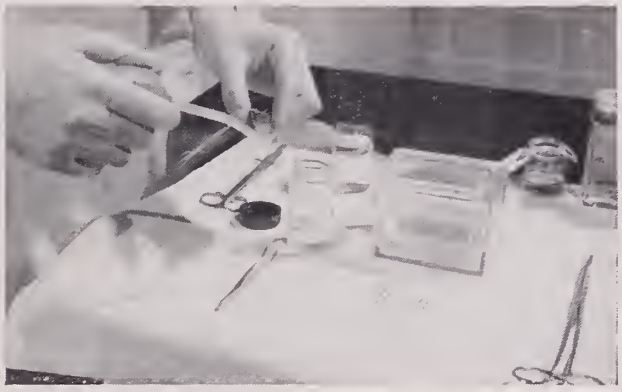
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References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

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1. Ford, R. A., and Blanchard, K.: Journal-Lancet 78:185, 1958.

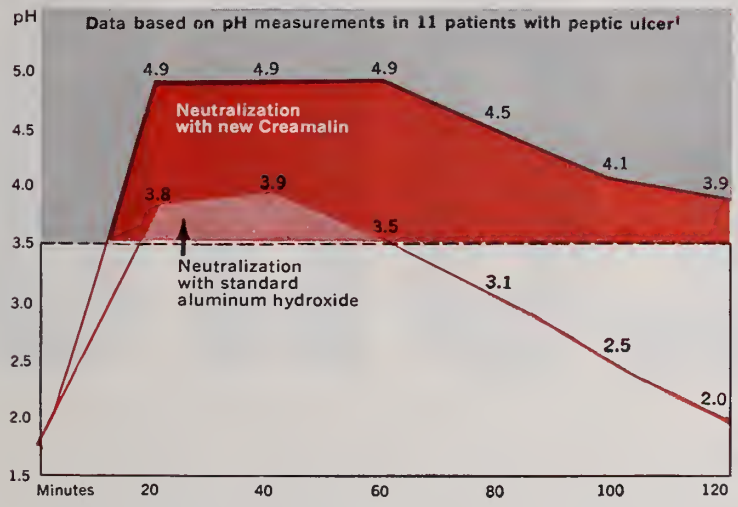
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1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

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References: (1) Goodier, T. E. W., & Parry, W. R.: *Lancet* 1:356, 1959. (2) Modarress, Y.; Ryan, R. J., & Francis, Sr. C.: *J. M. Soc. New Jersey* 57:168, 1960. (3) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* 105:398, 1960. (4) Rebhan, A. W., & Edwards, H. E.: *Canad. M.A.J.* 82:513, 1960. (5) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* 173:475, 1960. (6) Olarte, J., & de la Torre, J. A.: *Am. J. Trop. Med.* 8:324, 1959. (7) Berle, B. B., *et al.*: *New York J. Med.* 59:2383, 1959. (8) Fisher, M. W.: *Arch. Int. Med.* 105:413, 1960.

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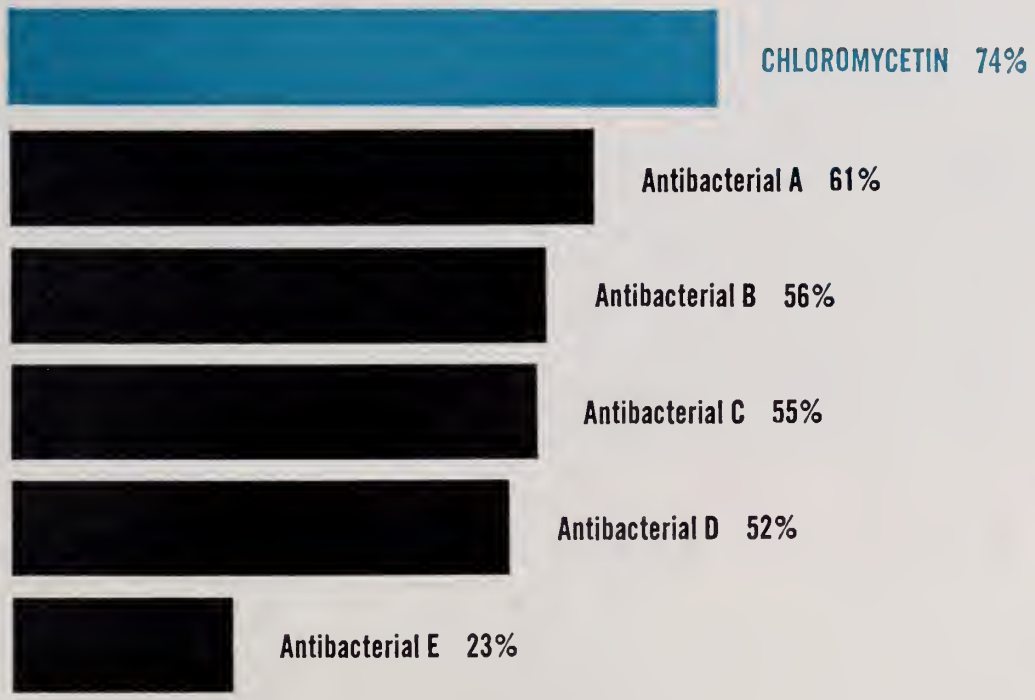
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References: 1. Hollander, J. L.: *J.A.M.A.* 172:306 (Jan. 23) 1960. 2. McGavack, T. H.: *Nebraska M. J.* 44:377 (Aug.) 1959. 3. McGavack, T. H.; Kao, K. Y. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.: *Am. J. M. Sc.* 236:720 (Dec.) 1958.

Precautions: Collateral hormonal effects generally associated with corticosteroids may be induced. These include Cushingoid manifestations and muscle weakness. However, sodium and potassium retention, edema, weight gain, psychic aberration and hypertension are exceedingly rare. Dosage should be individualized and kept at the lowest level needed to control symptoms. It should not exceed 36 mg. daily without potassium supplementation. Drug should not be withdrawn abruptly. Contraindicated in herpes simplex and chicken pox.

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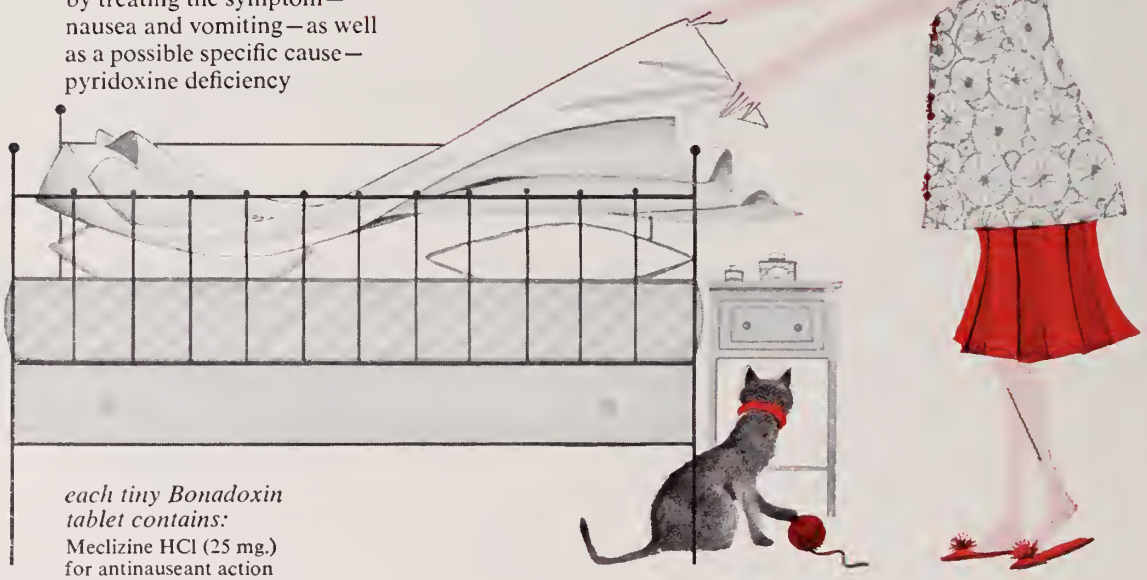
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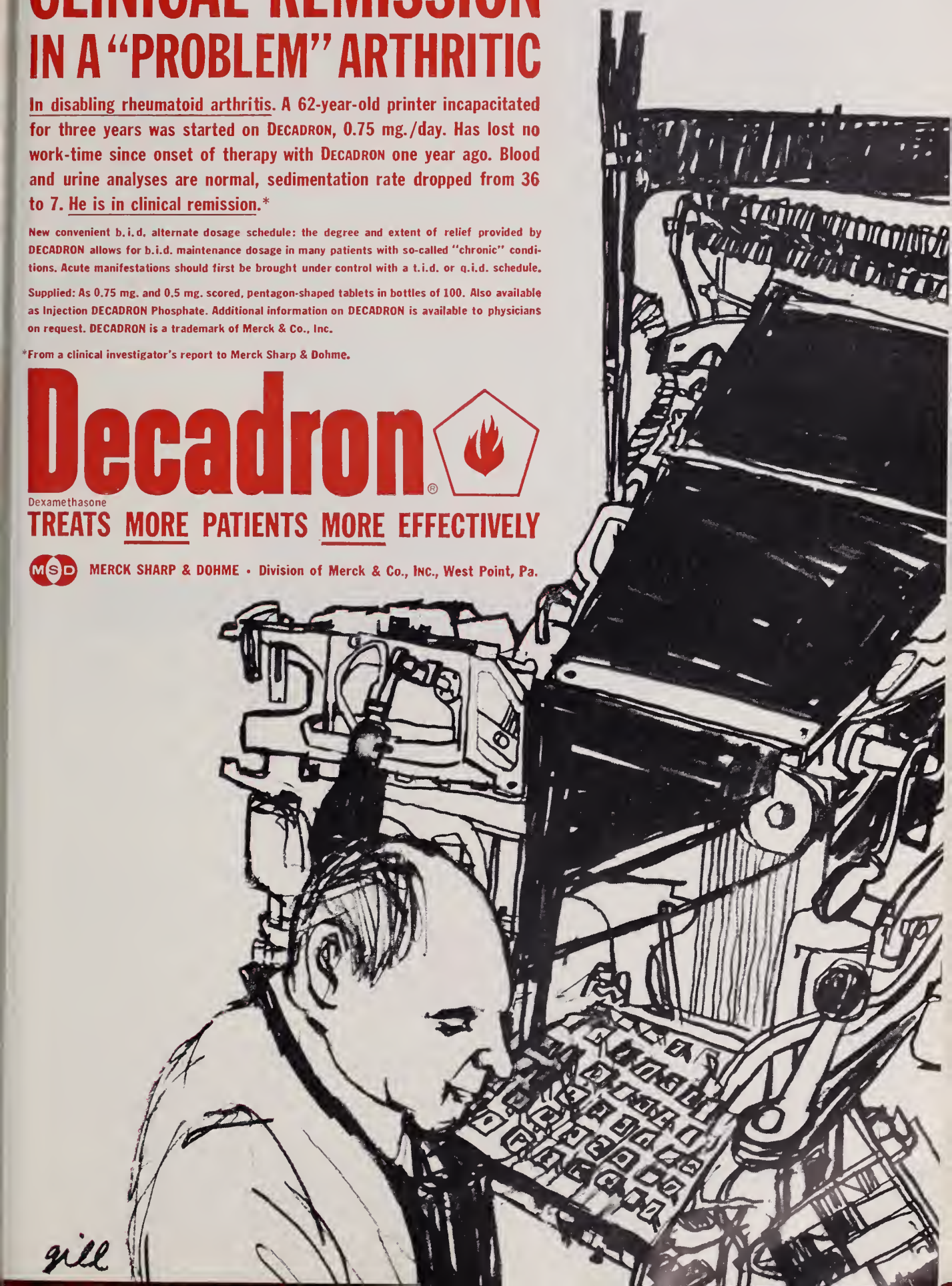
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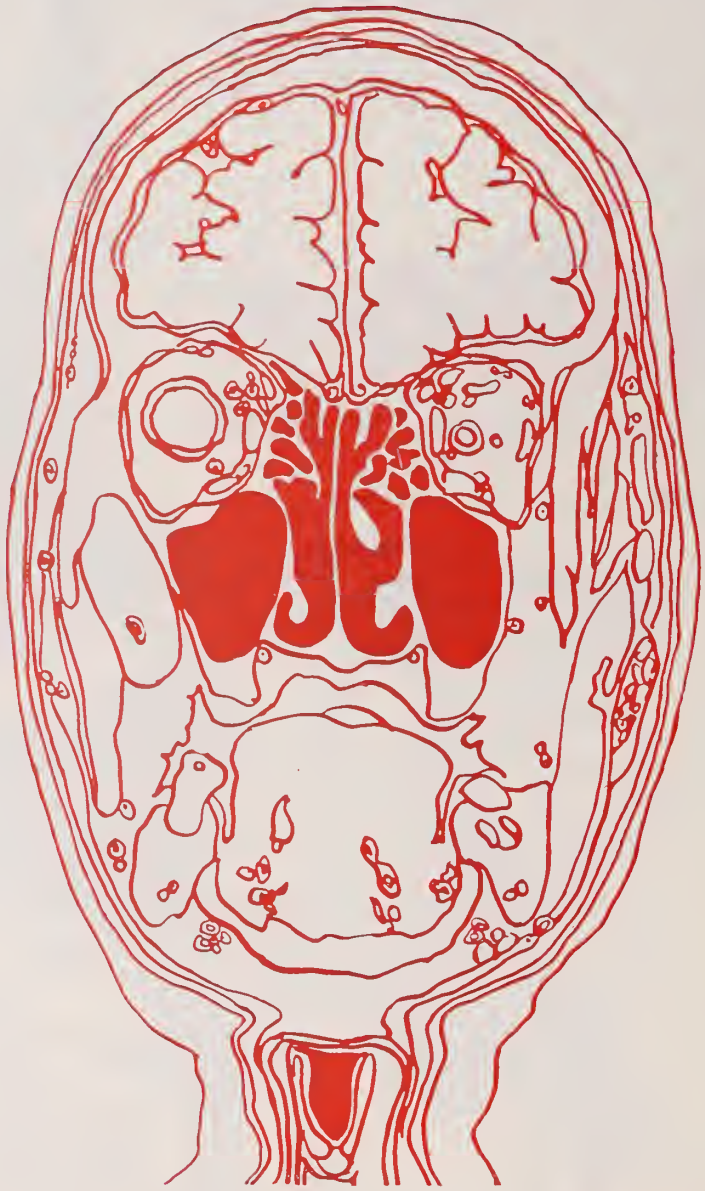
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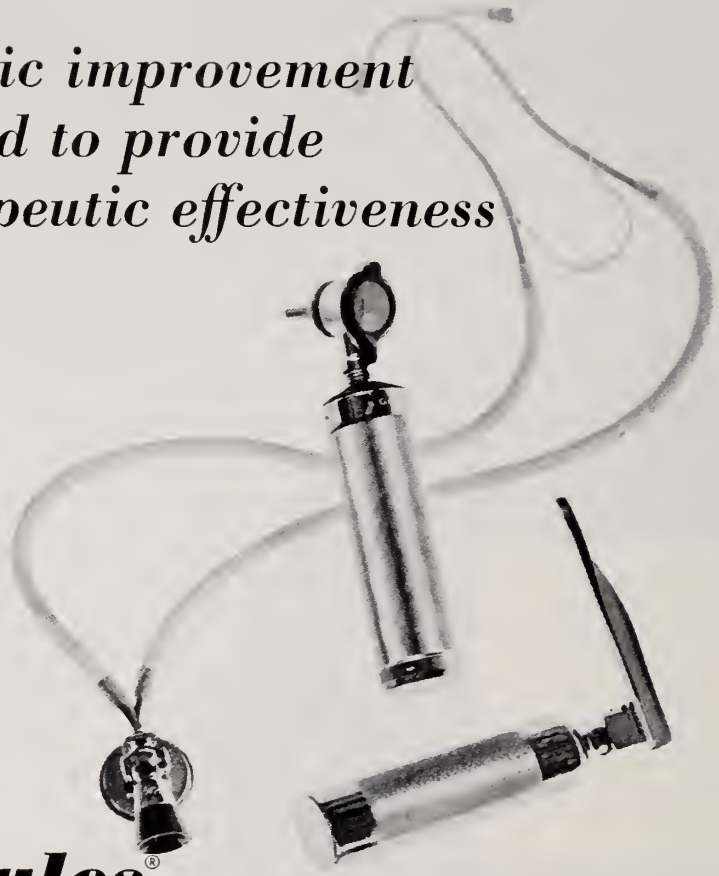
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1. Stephens, V. C., *et al.:* J. Am. Pharm. A. (Scient. Ed.), *48*:620, 1959.
2. Salitsky, S., *et al.:* Antibiotics Annual, p. 893, 1959-1960.
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4. Kuder, H. V.: Clin. Pharmacol. & Therap., in press.

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The Clinical Pharmacology of Diuretics And Their Use in Clinical Medicine*

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ROBERT SELLER, M. D.
ALBERT N. BREST, M. D.
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Philadelphia, Pa.

Introduction

THE treatment of the edematous patient is one of the commonest problems encountered in clinical medicine; it is also one of the most challenging. Whenever possible, treatment should be directed at the specific pathophysiologic defect, but often the latter is not amenable to direct therapy. Treatment must then be directed at the secondary defect, i.e. abnormal retention of salt and water. The diuretic drugs presently offer the most effective means of controlling excessive fluid and electrolyte accumulation.

The clinical conditions associated with edema formation can be divided into five major categories. Cardiac edema, or congestive heart failure, is the most common. Less frequent causes of edema include renal disease, e.g. nephrotic syndrome and glomerulonephritis; premenstrual edema and the edema of pregnancy; hepatic disorders, e.g. cirrhosis; and iatrogenic, e.g. steroid-induced edema. Additional clinical problems include the mechanical edema secondary to venous or lymphatic obstruction and nutritional edema due to hypoalbuminemia and vitamin deficiencies.

There is currently available a wide spectrum of diuretic drugs with varying pharmacologic mechanisms. The proper selection of the most effective preparation depends upon a thorough understanding of the disturbed pathologic physiology and an intimate knowledge of the individual attributes of the various diuretic agents. The present report reviews the clinical pharmacology and therapeutic indications for diuretic therapy.

Clinical Pharmacology

Organomercurials. Despite the introduction of numerous newer agents, parenterally administered organomercurials remain among the most potent and consistently reliable diuretic compounds. These drugs probably inhibit sulfhydryl

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Hypertension-Renal Unit, Hahnemann Medical College and Hospital, Philadelphia, Pennsylvania.

containing enzymes which, in turn, regulate the tubular reabsorption of sodium and chloride ions. Controversy exists as to whether the mercurials primarily inhibit sodium or chloride reabsorption.[1] Regardless of the primary mechanism, however, the urinary loss of these ions results in an accompanying water diuresis.

The glomerular filtration rate may rise, fall, or show no change during mercurial diuresis. Changes in renal plasma flow show a similar inconsistency. It therefore seems probable that these functions are not significantly involved in the diuretic effectiveness of these compounds. The effect of mercurial diuresis on potassium excretion is variable; however unless there is a massive diuresis, potassium excretion is not significantly enhanced (see Figure 1).

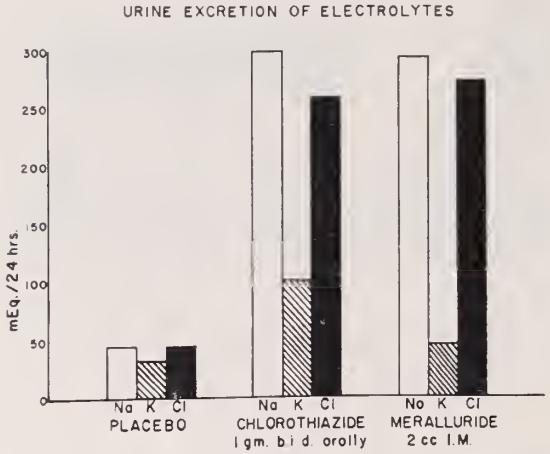


Figure 1. When meralluride is administered parenterally, the primary effect is an increase in sodium and chloride excretion with a minimal effect on potassium excretion. When chlorothiazide is administered the primary effect is also on sodium and chloride excretion but there is also a significant increase in potassium excretion. (Moyer and Fuchs, Am. J. Cardiol., 4:786, 1959.)

Mercurial absorption following subcutaneous and intramuscular injection is essentially complete within twenty-four hours in patients with minimal edema. The subsequent natriuresis parallels the urinary excretion of the mercurial. Generally, thirty percent or more of a parenterally administered mercurial is excreted in less than six hours. In patients with severe congestive failure, mercurial excretion following subcutaneous or intramuscular administration is somewhat delayed due to the poor circulation.

The oral mercurials are also effective diuretic agents when used in the higher dose ranges although gastrointestinal disturbances are prominent limiting factors. The most useful oral preparation is chlormerodrin (Neohydrin). The latter compound not only is better absorbed from the intestinal tract (up to 15 per cent) but is also several times more potent than other currently employed oral mercurials. During recent years, however, the oral compounds have been largely replaced by the thiazide derivatives which possess greater therapeutic potency and a lesser incidence of accompanying side reactions (see Figure 2).

Benzothiadiazine Derivatives. The precise mode of action of the thiazide diuretics has not been determined.[2] Most likely their major effort is related to the inhibition of sodium and chloride reabsorption at the tubular level. Although these com-

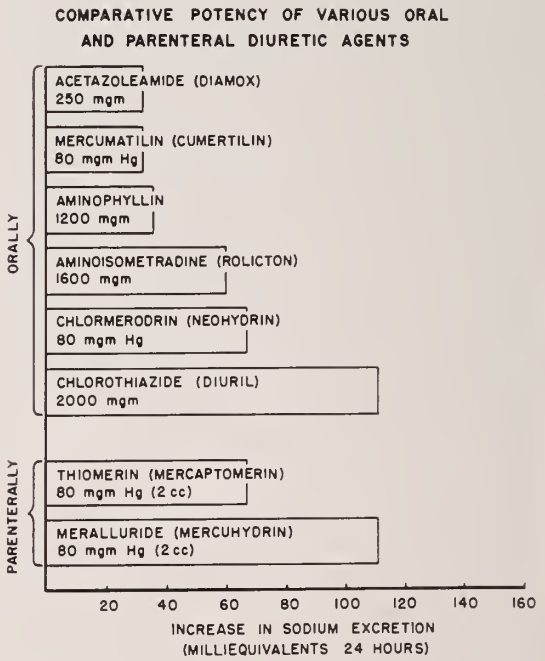


Figure 2. Chlorothiazide administered orally is of the same order of potency as meralluride administered parenterally. Both of these agents are more potent than acetazolamide and chlormerodrin given orally and mercaptomerin given parenterally. (Moyer and Fuchs, Am. J. Cardiol., 4:786, 1959).

pounds are known to be carbonic anhydrase inhibitors in vitro and also at high dosage in vivo, this latter action does not appear to be their primary mechanism.

The thiazides are rapidly absorbed from the gastrointestinal tract and sodium excretion begins within two hours after oral administration. Diuretic activity subsequently persists for approximately twelve hours. With effective diuretic doses of chlorothiazide, the increased rate of sodium excretion is nearly balanced by increased chloride loss; however potassium and bicarbonate excretion is much less intense. During diuresis caused by chlorothiazide, there is no significant change in glomerular filtration rate or renal plasma flow.

In human bioassay studies with oral chlorothiazide, there is an increased diuretic response in dosages up to 2 grams. When the potency of chlorothiazide is compared with the mercurials, 2 cc. of meralluride given parenterally produces an increase in sodium excretion which is somewhat greater than 2000 mg of chlorothiazide.[3]

The basic pharmacology of hydrochlorothiazide is quite similar to that of the parent compound.[4] The onset of diuretic activity occurs after the first hour and reaches a maximum in three hours. As with chlorothiazide, the duration of activity is approximately six to twelve hours. At the maximum effective dose (200 mg.), potassium excretion is approximately one-half that of sodium but chloride excretion is considerably greater. The latter effect differs from the response obtained with chlorothiazide and also the mercurial diuretics in which the sodium and chloride excretions are more nearly equal or the sodium excretion exceeds the chloride loss.

Flumethiazide, which results from the structural replacement of a triflouromethyl group on the sixth carbon atom of chlorothiazide, possesses the same basic pharmacology as chlorothiazide.[5] The maximum effective dose of the two drugs is essentially the same (2000 mg), and their clinical effectiveness is similar. Hydroflumethiazide, which results from the hydrogenation of carbons 3 and 4 of flumethiazide, has a dose range and electrolyte excretion pattern similar to hydrochlorothiazide except for a somewhat lesser kaliuretic effect.[6] By further adding a 3-benzyl radical to hydroflumethiazide, an additional increase in natriuretic effectiveness is accomplished. With benzylhydroflumethiazide, effective sodium excretion is obtained with doses between 2.5 and 10 mg, which is a 200 to 1 ratio as compared with chlorothiazide and flumethiazide.[7]

These various benzothiadiazine derivatives have all proven to be effective diuretic agents. The sodium excreting effects at maximum dose levels and the weight-loss response in heart failure patients are similar with each of the drugs even though the total number of milligrams has been markedly reduced with the newer derivatives.

Xanthine and Isocytosine Derivatives. Xanthine derivatives, such as aminophylline and various salts of theobromine, are derivatives of purine which is found in nucleic acid. Aminometradine (Mictine) and aminoisometradine (Rolicton) are more recently introduced oral diuretics. The latter compounds are derivatives of the pyrimidine base cytosine which also is found in nucleic acid.

The diuresis produced by the xanthine diuretics appears due primarily to a direct tubular effect.[8] Aminophylline inhibits those enzyme systems in the renal tubule necessary for reabsorption of sodium and chloride and a secondary increase in water excretion results. The latter action appears to be the most prominent effect of the xanthines, although they also have a stimulant action on the myocardium resulting in increased glomerular filtration and renal blood flow. The isocytosines have effects on renal transport mechanisms similar to those of the xanthine diuretics. In addition, they also produce an occasional moderate increase in renal plasma flow but glomerular filtration rates are not significantly altered.

The isocytosine drugs have proved to be effective oral diuretics, but their efficien-

cy is limited to the mild and moderate states of edema and they must be used intermittently to maintain maximum efficiency. The xanthines, especially aminophylline, are still in common usage but their potency is poor when compared with the mercurial diuretics. Nevertheless, they can be therapeutically useful since they frequently produce a significant potentiation of natriuresis when used in combination with other diuretic agents.

Carbonic Anhydrase Inhibitors. The therapeutic use of oral carbonic anhydrase inhibitors has been most effective in the management of mild to moderate edema. Acetazolamide (Diamox) and ethoxzolamide (Cardrase) are currently the most widely used members of this group. Their diuretic response is secondary to carbonic anhydrase inhibition; the latter effect blocks the exchange of hydrogen ions for sodium in the cells of the renal tubules and, in addition, bicarbonate loss and metabolic acidosis ensue. When given orally, these drugs have no significant effect on glomerular filtration or renal blood flow.[9]

The carbonic anhydrase inhibitors lose their natriuretic effect in three to four days, and therefore, cannot be administered continuously. When used in the treatment of heart failure, acetazolamide and ethoxzolamide should be given for two or three successive days, allowing at least two days between subsequent drug courses. Another method is to give the drug as a single dose every other day. Acidosis due to renal failure must be considered a definite contraindication to the use of carbonic anhydrase inhibitors.

Spirolactones. Increased aldosterone secretion is generally present in the various edema states. Although the responsible mechanism(s) has not been precisely defined, it appears likely that the initial stimulus for enhanced aldosterone secretion is reduced plasma volume. Aldosterone excess, in turn, increases tubular reabsorption of sodium and enhances potassium excretion.

Spironolactone (Aldactone) is a steroidal spirolactone which possesses the ability to antagonize the electrolyte effects of aldosterone. The drug apparently acts competitively with aldosterone at the renal tubular level where it depresses the transport mechanism responsible for the reabsorption of sodium and secretion of potassium.[10] Spironolactone has been found to augment the diuretic effects of other agents including the mercurials and the thiazide derivatives. It is significant, however, that the drug is effective only in the presence of aldosteronism.

The Clinical Use of Diuretics

Successful management of the various edema states requires a thorough knowledge of the basic pathophysiologic mechanisms involved. Treatment should be directed primarily at the underlying physiologic disturbance, and diuretic therapy should be considered only as an additional clinical tool to be used in support of the basic therapeutic regimen.

Cardiac Edema. It appears likely that several mechanisms are responsible for salt and water retention in the patient with cardiac failure. Decreased renal blood flow and glomerular filtration are followed by diminished sodium and water excretion. Depressed arterial blood flow with increased venous pressure of the liver impairs the inactivation of the mineralocorticoids and aldosteronism ensues. In addition, the hyperosmolarity produced by electrolyte retention results in increased antidiuretic hormone (ADH) secretion and further water retention results.

The basic objectives of treatment are improvement of myocardial function and reduction of salt and water retention. These objectives are best achieved with digitalis therapy and the control of complicating factors such as hypertension. Reduction in physical activity is also helpful since exercise reduces glomerular filtration and thereby enhances electrolyte and fluid accumulation. Restriction of sodium intake is an additional therapeutic aid.

Diuretics can be administered as follows:

1. In severe heart failure, 2 cc. of a

parenteral mercurial, e.g., meralluride (Mercuhydrin), is given daily for three to five days until edema has disappeared.

2. After decompensation has improved, chlorothiazide (or an equivalent dosage of one of the other thiazide derivatives) may be administered in a dose of 1000 mg. every twelve hours. Subsequently, a maintenance dose of 500 to 1000 mg. of chlorothiazide will generally be adequate.

3. Less severe failure can often be controlled with acetazolamide (250 mg.) or ethoxzolamide (250 mg.) or aminoisometradine (600 to 1200 mg.) given daily for three consecutive days of each week. Oral mercurial diuretics such as chlormerodrin (Neohydrin), five to eight tablets daily, can also be used.

Renal Edema. Edema of renal origin is most commonly secondary to glomerulonephritis or the nephrotic syndrome. In the former instance, decreased glomerular filtration and renal blood flow result in diminished sodium excretion; in addition, increased vascular permeability is an important contributing factor. The treatment of the nephritic patient initially consists of bed rest, sodium restriction, and diuretic therapy. The thiazide derivatives, e.g. chlorothiazide (500 to 1000 mg. b.i.d.), are particularly useful. Acute glomerulonephritis unresponsive to conservative management may require adrenal cortical steroid therapy.

In the nephrotic syndrome, not only is there decreased glomerular filtration and renal blood flow but marked proteinuria exists as well. Edema production is enhanced by the presence of hypoalbuminemia and the consequent reduction in plasma colloid osmotic pressure. Management of the nephrotic consists of bed rest, sodium deprivation, and diuretic stimulation preferably with the thiazide derivatives. However, if the latter measures do not adequately control the edema, a trial with ACTH or steroid therapy is in order. In addition, if edema is severe, parenteral mercurials may be used with some success without real danger of toxicity from the drug. If there is no response to the aforementioned regimens, salt-poor albumin (100 gm., intravenously, every other day) or spirolactones (100 mg. q.i.d. of Aldactone) may be tried.

Premenstrual Edema and Edema of Pregnancy. The cause of premenstrual edema has not been precisely defined. However, the hormonal events of the premenstrual period probably influence the renal tubule directly or indirectly with consequent increased reabsorption of water and sodium. Premenstrual edema can usually be controlled with sodium restriction and oral diuretics administered during the last five to seven days of the menstrual cycle. Chlorothiazide in a dose of 500 mg. twice daily or acetazolamide (250 mg.) or ethoxzolamide (125 mg.) daily is usually adequate.

Edema of pregnancy may occur incidental to a pre-existing disease such as glomerulonephritis, or it may be a manifestation of toxemia of pregnancy. Whatever the interrelated factors in edema of pregnancy, the common denominator is increased tubular reabsorption of sodium and water. Since pre-existent disease may be responsible for edema in this entity, a thorough medical survey must be completed. The use of a low sodium diet plus thiazide derivatives or carbonic anhydrase inhibitors will generally control the abnormal fluid retention encountered in toxemia of pregnancy.

Hepatic Edema. Multiple factors account for edema and ascites formation in hepatic disease. Decreased inactivation of aldosterone and diminished osmotic gradient due to disordered protein formation promote excess sodium and water accumulation. In addition, portal hypertension and venous outflow block also contribute to fluid retention. Treatment of hepatic edema initially consists of adequate dietary control, bed rest, and diuretic therapy. Restriction of sodium is essential. In addition, a high protein intake to aid in positive nitrogen balance and protein synthesis is beneficial unless ammonia intoxication becomes clinically significant. Bed rest is also helpful since hepatic blood flow is greater in the supine position and

the demands upon hepatic metabolism are reduced.

Diuretic therapy can also be effectively utilized. Parenteral meralluride (Mercuhydrin), 2 cc. daily, will frequently produce marked natriuresis and diuresis. Dry weight may subsequently be maintained with 500 to 1000 mg. of chlorothiazide given daily. Occasionally the simultaneous use of mercurial diuretics and thiazide derivatives is more effective than either agent used alone. In refractory cases, the therapeutic combination of thiazide diuretics with adrenal cortical steroids or spironolactone may occasionally be helpful.

Iatrogenic Edema. Edema as a result of the chronic therapeutic administration of adrenal cortical steroids is becoming an increasingly common clinical problem. Although the edema can be controlled by discontinuation of steroid therapy, it is frequently not feasible to do so. In the latter instances, sodium restriction plus diuretic therapy will generally control edema formation. Thiazide derivatives (e.g. 500 mg. to 1000 mg. of chlorothiazide twice daily) used alone or in combination with mercurials are usually adequate.

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Editorial Letter
A Word of Explanation to My Professional Friends

My confreres in medicine have hitherto accorded me a degree of confidence and support at all times gratifying although it may be that they were occasionally in excess of my desserts.

It therefore seems to me proper to explain to those who are non-residents of this city why it has occurred that the daily press here has for some months been delighted to fill its columns with uncomplimentary strictures upon my efforts to discharge the very important duties of my position as a member of the National Board of Health. I should, in the first place, remark that these duties related to the whole country—not to New Orleans alone. It consequently resulted that the selfishness and short sighted policy of a majority of the members of the State Board of Health caused them to assume the attitude of declared enemies of myself, indeed, of all persons who took in consideration any interests except those comprised in their contracted view.

* * *

But amid all this defilement of our temples by the daily papers at the instigation of ignoble brethern, occurrences which have perplexed me greatly have been the statements of physicians that cases which in 1878 they would have called yellow fever, are not yellow fever in 1880. When a physician tells me he has just treated a fever of one paroxysm with black vomit, suppression of urine and body turning yellow after death, and that in 1878 it would have been yellow fever but in 1880 it is hemorrhagic malarial fever, my fingers must go into the nail wounds before I agree that the Great Master is again on earth and speaks.

S. M. BEMISS, M. D.

New Orleans M. & S. J. 8:476 (November) 1880

Surgery in the Prevention of Abortion*

• The authors review many factors which cause abortion and discuss the relatively uncommon cases in which surgery is indicated. Careful selection of these cases is emphasized.

H. D. WEBSTER, M. D.†
DAN W. BEACHAM, M. D.†
WOODARD D. BEACHAM, M. D.†
New Orleans

INASMUCH as there has recently been an increase in the number of operations done on the uterus to prevent loss of pregnancy, it is timely to present a discussion of these operations and their proper place in the avoidance of the expulsion of the products of conception before the fetus is sufficiently mature to survive.

In considering the need for these operations it is well to review the multiple factors involved in the causes of abortion and the frequency of occurrence of various types of terminations of pregnancies. Javert[3] gives the classification in Table 1:

TABLE 1
CLASSIFICATION OF INFANTS AND TYPES OF DELIVERY BY BIRTH WEIGHT AND DURATION OF GESTATION *

Type of Delivery	Weight in Grams	Gestation in Weeks
Abortion	0-500	0-22
Immature	501-1,500	22-30
Premature	1,501-2,500	30-36

* By permission from **Spontaneous and Habitual Abortion**, by Carl T. Javert, M. D., Copyright 1957. McGraw-Hill Book Company, Inc.

He found that of 30,788 pregnancies, 8.3 per cent were spontaneously aborted, 1.2 per cent terminated as immature deliveries and 4.7 per cent terminated as premature deliveries. Of the ovofetuses of less than 500 grams, 35 per cent were malformed and 42.8 per cent were degenerated or macerated. Only 22 per cent were living and completely normal. Appropriate therapy may have salvaged this small group. These figures are quoted to emphasize that early abortions are usually due to faulty fetal development and cannot be prevented by uterine operations.

Time does not allow a thorough presentation of the etiology of pregnancy loss. The various established factors are decidual hemorrhage, malformed fetus, endometrial polyps, tuberculosis of the endometrium, intra-uterine trauma, separation of the placenta, cervical implantation, rupture of the membranes, amnionitis, hydatidiform degeneration, vascular anomalies of the umbilical cord; knots, looping or twisting of the cord; infarction of the placenta, multiple gestation, syphilis, maternal viral infections, chronic vascular diseases, disseminated lupus erythematosus, peritonitis, operations on the uterus, therapeutic pelvic irradiation, malnutrition, marked emotional disturbances, incarceration of the uterus, uterine malformation, cervical incompetency and uterine myomas. The last four factors are intrinsic to the uterus and will be considered in this presentation. The likelihood of any of the other factors being involved must be carefully considered when deciding as to the advisability of surgery.

Incarceration of a retroplaced uterus below the sacral promontory can usually be reduced by having the patient assume the knee-chest position, crawl, or "stand on her head" with assistance. Adhesions of infectious or endometriotic origin which "fix" the uterus in the cul-de-sac usually preclude conception, consequently, operations to release adhesions are very rarely needed.

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, in Baton Rouge, May 4, 1960.

† From the Department of Obstetrics and Gynecology, Tulane University School of Medicine, New Orleans.

Uterine Myomas

The role of myomas in infertility is difficult to evaluate, although statistically there is a definite correlation. When myomas are found associated with pregnancy, experience has shown that usually no treatment is needed. If carneous (red) degeneration occurs, rest and analgesics are indicated. Myomectomy should be used only for persistent pain or evidences of intra-abdominal bleeding. Torsion of pedunculated subserous myomas usually causes severe pain and requires early operation.

If repeated abortion occurs in a myomatous uterus, myomectomy is in order. In searching for the causative factors in repeated abortions, hysterosalpingography using a radiopaque solution followed by contrast films with carbon dioxide in the uterine cavity should be done to visualize submucous myomas. Myomectomy is very infrequently necessary in habitual aborters as exemplified by the fact that Javert performed only three myomectomies in 100 such patients and Mann reported that myomas were not incriminated in any of 160 cases.

Uterine Anomalies

The role of malformed uteri in pregnancy loss has long been recognized. Improvement in surgical care, particularly the avoidance of infection, has justified the more frequent repair of septate and bicornuate uteri when repeated abortion has occurred.

In habitual abortions malformations of the uterus have been found in 1 to 2 per cent. Recognition has been made by intrauterine palpation at the time of abortion or by hysterography while non-pregnant. Studies have shown that patients with complete duplication of the uterus are not prone to obstetric failure and that bicornuate or septate uteri, although subject to abortion or premature labor, may carry infants to maturity. The decision to operate for correction of a misshapen uterus is best based on the reproductive experience of the patient. In a series of 65 patients operated upon, Jones et al,[4, 5] reported that three-fourths had a successful pregnancy.

For example, a 24-year-old quintigravida was found to have a bicornuate uterus following her fourth consecutive mid-trimester abortion. Her first pregnancy terminated at twenty-eight weeks with the delivery of a surviving infant. Hysterosalpingograms obtained after her last abortion revealed the uterine anomaly but excretion urograms were normal. Seventeen months after a modified Strassmann operation by Dr. Jack Kushner, a full term, normal baby was delivered by cesarean.

Incompetency of the Cervix

During recent years the entity of cervical incompetence has been recognized. Most commonly it has been found following delivery or dilation and currettage with injury of the upper cervix. Primary incompetence of the internal os is thought to exist by some investigators.

In a study of 160 habitual aborters, Mann [7] reported 13 patients with cervical incompetency. Barter et al,[2] found 22 cases during the time that 35,000 deliveries were managed. The occurrence of gradual dilation and effacement of the cervix without unusual contractions from fourteen to twenty-eight weeks gestation is expected to occur with this condition. Bulging membranes may be found. If the patient has not been examined to determine the gradual painless cervical dilation, the first finding is apt to be rupture of the membranes. Loss of the pregnancy soon follows.

When this condition is detected during pregnancy prior to rupture of the membranes, the cervix may be closed by a constricting band placed around the cervix (Shirodkar operation). Before performing this procedure it is well to observe the patient for forty-eight hours at bedrest in order to be certain the membranes are intact and that no other cause for termination of the pregnancy exists (placental separation, fetal anomaly, et cetera).

Cervical incompetency can be suspected in the non-pregnant woman with a history of one or more episodes of pregnancy loss

as described above. Demonstration of a patulous upper cervix by the passage of a number 10 dilator without resistance indicates the condition and at times an area of previous injury can be localized by careful palpation with the dilator in place. Hysterosalpingography as used to determine tubal patency does not demonstrate cervical incompetence. Special balloon techniques have been devised. When this condition has been properly diagnosed by objective findings in addition to the history in the non-pregnant patient, cervical repair can be performed as described by Lash.[6]

We are indebted to Dr. Fred O. Brumfield for the following data regarding a patient whose first pregnancy terminated in 1952 with the spontaneous delivery of a normal 7 lb. 15 oz. baby. In 1954 she had a D. & C. for intermenstrual bleeding. During the following year, at the eighteenth week of her second gestation, the cervix was found to be approximately 4 cm. dilated and the amniotic sac was presenting in the vagina although there was no history of uterine contractions. Pregnancy loss resulted. Hormonal therapy and bedrest were unsuccessful in the management of her third pregnancy which ended similarly at the nineteenth week. Subsequent examination revealed a cervical os that easily admitted a number 10 Hegar dilator. On April 2, 1956, a Lash procedure was performed. She was delivered vaginally at term of a 6 lb. 7 oz. girl in April of the following year. Postpartum examination revealed competency of the internal cervical os.

When the patient is pregnant and the condition is anticipated by history, Barter[1] advocates performing the Shirodkar operation at fourteen weeks gestation. Others may choose to wait until cervical dilation is beginning.

The following case is an example:

L. A. P., a 23-year-old gravida IV, para II, aborta I, was seen February 4, 1959 approximately six weeks pregnant with an E.D.D. of September 27, 1959. Past history revealed her first pregnancy ended in premature delivery at seven months of a 4 lb. 6 oz. female who lived. This was followed by a spontaneous abortion at two months. Her third pregnancy ended in premature labor at seven months with delivery of a 4 lb. 6 oz. male who failed to survive.

She was followed in early pregnancy by frequent vaginal examinations until twenty-eight weeks gestation at which time the cervix was found to be dilated approximately 2 cm. Cervical ligation was performed, using Mersilene according to the technique of Barter. The oral administration of Provera was continued postoperatively. Her course was uneventful until September 7, 1959, when labor spontaneously ensued nine weeks after operation. A low transverse cesarean was done with the delivery of a 6 lb. female in excellent condition.

Complications

The complications inherent in the Lash procedure are failure of adequate healing after repair, due to infection, and rupture of the uterus in the scarred area during pregnancy. Lash[6] found that of 47 patients 31 were delivered vaginally and 16 by section.

Following the Shirodkar procedure slough and extrusion of the non-absorbent material may occur. Increased contractions of the uterus or rupture of the membranes may require removal of the cervical "constrictor." Rupture of the uterus may occur due to strong contractions with an obstructed cervix.

Postoperative bleeding has been reported after both procedures. Various complications of pregnancy non-inherent in the operations may cause loss of the infant.

Conclusions

1. In evaluating the place of surgery in the prevention of abortion, all the factors causing abortion must be considered. Those cases amenable to surgical correction are relatively uncommon and should be carefully selected.

2. Myomas are seldom the cause of pregnancy loss. Myomectomy during pregnancy is rarely needed and myomectomy

to avoid repeat abortion is even more rarely justifiable.

3. In all cases of habitual abortion or premature delivery, the uterine cavity should be examined carefully following expulsion of the placenta.

4. Septate and bicornuate uteri should be surgically corrected when repeated pregnancy loss from no other discernible case has occurred.

5. Cervical incompetency is a definite clinical entity, which can be accurately diagnosed by objective findings in the non-pregnant patient with a typical history.

6. Correction of cervical incompetency can be done by the Lash operation prior to pregnancy or by the Shirodkar operation during pregnancy with anticipation of successful pregnancy resulting in 80 per cent or more.

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Discussion

Dr. Joseph A. Farris (Baton Rouge): I wish to commend Doctors Beacham and Webster on a well written paper.

As you know, Lash and Lash presented their first paper on the incompetent cervix in 1950, which procedure involved a wedge resection of lower segment. In a series published in 1957, Lash had done 68 wedge resections, 41 of their patients became pregnant and 34 delivered viable babies.

Shirodkar recommends the use of homologous fascia, thus creating no scar in the lower uterine segment, thus making possible vaginal delivery.

McDonald recommends the use of polyethylene tubing, through which tantalum has been inserted at level of internal cervical os. Two strands are used.

The following criteria have to be met before surgery: (1) It must be done prior to pregnancy or before the 24th week of pregnancy; (2) It should not be done in the presence of bleeding, ruptured membranes, tumors or fetal death, and (3) The patient should particularly be watched when using the polyethylene tubing for threatened abortion or premature labor.

I do know of two cases which have had this procedure done, one is 7½ months and the other is 3 months. Both of these have had 6 previous abortions.

I agree with the authors that myomectomy is seldom indicated as it rarely interferes with conception.

University-State Affiliated Mental Health Training and Research in a State Hospital*

• Many benefits have accrued to the hospital for mental diseases and to the patients from the program instituted which provides for the training of personnel.

R. WELLS BUDDINGTON, M. D.
New Orleans
WINBORN E. DAVIS
Baton Rouge
FRANCISCO SILVA, M. D.
Jackson

SOMETIME in the not too distant future, the year 1956 will be recognized as a singularly important date in the promotion of mental health in Louisiana. It was then that the State Legislature enacted measures which authorized the State Department of Hospitals to develop a far reaching program for training personnel to staff mental hospitals, mental health clinics and guidance centers. The program was designed to deal with the problem of insufficient numbers of trained personnel, a problem that had been paramount since Louisiana first began a public program in mental health during 1948. For years hospitals and clinics had hoped that training institutions would provide qualified professional personnel in sufficient numbers to staff public mental health facilities. By 1956 it had become apparent that the institutions alone could not meet the increasing demands for trained personnel.

Act 480 of 1956

Act 480 of the 1956 Legislature was aimed at alleviating this problem by providing a continuing source of funds that did not depend on annual or biennial appropriations by the Legislature. It provided that all funds paid to state hospitals by or in behalf of patients who are able to pay for services should be placed in a Mental Health Research and Training Account to be administered by the State Department of Hospitals. The Act dedicated these funds "for the purpose of conducting research programs in problems relating to mental illness and to support programs of teaching and training physicians, psychologists, social workers and other professional workers engaged in the care and treatment of mentally ill." This made it possible to develop a mental health training program that could provide more and better trained personnel to staff Louisiana's mental health facilities. It was believed that this, in turn, would result in better patient care, shorter periods of hospital stay, greater numbers treated on an out-patient basis and the ultimate reduction of in-patient populations in mental hospitals. It was further believed this would mean a savings to the individual who becomes ill as he loses less time from productive employment, and a savings to the State in terms of total cost per patient.

In implementing Act 480 the State Department of Hospitals adopted a somewhat unique plan. The Department recognized that considerable teaching personnel and perhaps years of time were necessary to develop approved training programs in its own hospitals and clinics. Again it turned to educational institutions which already operated accredited training programs. Agreements were worked out

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with the Louisiana State University and the Tulane University Schools of Medicine to set up *affiliated* resident training programs in psychiatry. Arrangements were made also with Tulane School of Social Work and L.S.U. School of Social Welfare to train additional psychiatric social workers, and with the L.S.U. Department of Psychology for the training of clinical psychologists.

Through these agreements the State Department provided funds for the schools to employ additional teaching personnel and to defray certain added costs of expanding their programs. This enabled the institutions to strengthen their training programs while turning out greater numbers of students. At the same time the State Department made available to the schools its own local facilities for placement of psychiatric trainees, psychology interns, social work students and psychiatric nurse students.

These funds are collected by the various State hospitals and deposited in the Mental Health Training and Research Account. During the fiscal 1956-57 while first funds were being collected, the Legislature appropriated $210,000.00 to get the program underway. Funds are collected during one fiscal year and expended during the following year. Collections to date are as follows:

1956-57	$336,988.00
1957-58	353,324.00
1958-59	477,079.00

It is believed that these figures will amount to more than five hundred thousand dollars per year as patients and families become accustomed to paying something toward hospital care and that these payments go toward providing better care for the mentally ill.

Selection and Education of Trainees

The schools are fully responsible for selection and education of trainees, who in turn are under complete jurisdiction of the schools during their period of training. Psychologists, social workers, and nurses may or may not receive a part of their training in a State facility. In the case of psychiatry, however, the first one and one-half years of training must be spent working with psychiatric in-patients at one of the State mental institutions. The other year and a half of training is spent in the out-patient facilities at either Tulane or L.S.U. Department of Psychiatry in New Orleans.

Stipends are available to mental health trainees who agree to work at least one or two years in State facilities upon completion of training. These stipends currently range from $2000 to $3600 per year for social workers, psychologists, nurses and music therapists. They may be awarded for one, two or three years. Psychiatry stipends are considerably more liberal and vary according to the training plan chosen. The four year career plan pays $5800 the first year, $6200 the second year, and $6600 the third year, while requiring at least one year employment afterward. The five year career plan pays $7200, $7800, and $8400 to trainees who agree to work at least two years after completion of training.

First trainees entered this program in September 1956, and at this writing the program is nearing the end of its fourth year of operation. Recruitment in psychiatry, psychiatric social work, and clinical psychology has been highly successful as evidenced by the figures in Table 1.

Of the 27 who have completed training, 26 are now employed in State mental health facilities, one worked a year and resigned. Of the seven who completed part of training, five are now employed, one worked a year and resigned and one is deceased. Some 20 of those presently training will complete their studies by July 1, 1960, and begin work. Recruitment continues to be sufficiently successful that the State Department anticipates an average of 25 to complete training each year and take their places in public mental health facilities.

Through this program Louisiana not only profits from more and better trained professional personnel to operate its mental health facilities, but also derives additional benefits from having training pro-

TABLE 1
NUMBER OF TRAINEES, JULY 1956 - FEBRUARY 1960

	Stipends Awarded	Completed Training	Completed Part of Training	Dropped	Now Training
Psychiatry	28	4	0	1	23
Neurology (Program started July 1959)	3	0	0	0	3
Psychiatric Social Work	37	12	2	3	20
Clinical Psychology	29	6	5	2	16
Psychiatric Nursing	4	3	0	0	1
Music Therapy	2	1	0	0	1
Clinical Pastoral Counselling	1	1	0	0	0
	104	27	7	6	64

grams operate in its local hospitals and clinics. This year psychiatrists are in training at all three State mental hospitals for the first time in history. Their presence is stimulating to staff at all levels and results in a higher quality of service to the patient. A most typical example is that of East Louisiana Hospital, Jackson, where six psychiatric trainees are currently in training. The remainder of this paper will deal with the affiliated program at Jackson as an example of what can happen when State and educational institutions collaborate in their efforts to solve a major health problem.

Program at East Louisiana State Hospital

The East Louisiana State Hospital was organized in 1845 and is Louisiana's oldest and largest State mental institution. It has a patient population of approximately 5000, with a staff in excess of 1100. For years the patient population in this hospital has been on the increase, averaging 2000 admissions per year. The hospital has been constantly expanding to accommodate more patients.

In fiscal 1956-57 there were more than 4800 patients cared for by eight physicians, only one of whom could be considered a qualified psychiatrist. Few of the modern therapies were used, and planned psychotherapy administered by trained therapists might be said to be non-existent. Tulane School of Medicine chose this institution in which to concentrate its affiliated psychiatric training and research programs.

In August 1957, the Acute Intensive Treatment Unit at East Louisiana was designated as the Training and Research Unit. Because of the tremendous size of this institution, this Unit was organized as a smaller hospital within the hospital. (It is interesting to note that this is exactly the procedure the largest state hospitals in California and in the East are following in an effort to introduce more dynamic care.) The Training and Research Unit was staffed at the beginning by one qualified psychiatrist who had the title of Director of Professional Education, one psychologist and one psychiatric trainee, plus an occupational therapist, nurses, and other supporting personnel. The unit was housed in a fairly modern building which was built to serve as an untidy ward, and a great number of physical changes had to be made in order to accommodate an Intensive Treatment Center. This building had four wards with a capacity of approximately 130 patients. Two of these wards were designated as Intensive Treatment wards while 2 others were selected as Research wards.

During the first year of operation, the Acute Intensive Treatment Service was functioning at half its capacity because of lack of staff and also because of the difficulties and mistakes that plague any new enterprise of this sort. Because of the low patient population at that time the cost of hospitalization per patient per day was in the neighborhood of $5.00 which was relatively high in comparison with costs for patients in the rest of the hospital (national average $4.50, V. A. Hospitals $11.00 per day per patient.) But this was fairly balanced because the aver-

age duration of hospitalization in the Training Unit was considerably shorter than in the remainder of the hospital.

Since 1957, the Training and Research Unit has been expanding continuously. At the present time, the Unit has a Staff of eight physicians, two of them trained psychiatrists and six resident trainees. (It is worth noting also that in the same period of time, the hospital has acquired two more fully-trained psychiatrists, products of the State training program—one being the Clinical Director of the hospital.) The psychology staff has increased also and at the present time, between full-time and part-time persons, four psychologists are working in the Unit. Next year in cooperation with Louisiana State University, Department of Psychology, the Unit plans to staff an internship program for psychologists. The number of graduate nurses has also doubled and in cooperation with the McNeese State College, Department of Nursing, the Unit is conducting a training program in psychiatry for student nurses. Also working at the Unit is a trained music therapist who is also a product of the training program of the State of Louisiana.

A look at the Hospital today reveals that this training program has provoked a great change in the hospital as a whole, and the Training and Research facilities have increased considerably. At the present time, the Unit has a capacity of over three hundred (300) beds, approximately one hundred fifty (150) of these beds are dedicated to the treatment of mentally ill people, one hundred fifty (150) are research beds and fifty (50) are neurology beds. In addition to the Acute Intensive Treatment wards in 1959, the Training and Research Unit, established and operated an admission service. At the present time, every white patient that is admitted to the East Louisiana State Hospital is screened in these admission wards. There, he receives necessary psychological, neurological and laboratory tests. A careful case history is compiled, diagnosis is made, and treatment is started. Later, according to the diagnosis and prognosis, the patients are transferred to various wards within the hospital.

The Acute Intensive Treatment wards are organized as an open-door hospital in which patients are encouraged to participate in the government of the wards. There is a patient government for each ward with officers elected by the patients, and there are weekly meetings between patients and the staff. In these meetings, the patients or their officers make suggestions as to how to improve the functioning of the wards and express any complaints that may have arisen. As a result of these meetings, great changes have occurred in the Acute Intensive Treatment wards. One thing, is that in many cases the patients themselves are in charge of the discipline in the wards.

In these wards, the patient receives what is called total push treatment. They participate in group or individual psychotherapy. They have drug therapy or electric shock therapy, if needed. There are also very active programs of occupational, recreational and music therapy. Patients are encouraged to wear their own clothes rather than drab hospital uniforms and an attempt is made to create as home-like an atmosphere as possible. Week - end passes are encouraged, when reasonable, in order that the patient can maintain contact with his family and friends. As a result of these activities, 84 per cent of the patients admitted to these wards now are dismissed from the hospital within seventy-two days after their admission. In the last few months, the Training and Research Unit alone has been sending home an average of 40 to 45 patients a month. This average period of hospitalization, two and a half months, compares very favorably with national statistics. As a result of increasing the bed facilities, the cost per patient per day has decreased considerably and it is now around $3.00 per day per patient making the total cost of hospitalization for each patient roughly $200.00.

These figures compare even more favorably with those of the Acute Intensive Treatment service prior to 1957 at which

time the Training and Research Program took over. While operated by the Hospital in fiscal 1956-57 the AIT Unit served less than 200 patients per year as compared to 311 patients in fiscal 1958-59. The average patient stay was one hundred and ninety-seven days (six and one-half months) in 1956-57 and only seventy-three days (two and one-half months) in 1958-59. Average per patient day cost in 1956-57 was $2.25, and had risen to $4.93 per day in 1958-59. However, total cost per patient stay had been reduced from $443.25 to $359.89 representing a saving of $83.36 per patient. To the economy of the program can be added the savings in human happiness when it is realized patients go home to their families and jobs some four months earlier than in 1956.

Let us turn now to the research aspects of the Training and Research Unit. The Research wards have collected a group of chronic schizophrenic patients who have been hospitalized for an average of fourteen years and who have received the usual type of somatic treatments without lasting improvement. This group of patients has been studied and followed carefully for more than two years. Complete physical, biochemical, psychological and social service data has been compiled for each of them. There is not, to our knowledge, any other group of chronic schizophrenic patients currently available for research which is as large, as well-studied or as thoroughly followed for a long period of time.

Since this Research ward was opened a great amount of research work has been done with regard to various biochemical aspects of schizophrenia. Many new drugs, some of which are not on the market yet and some that are just beginning to appear on the market, have been tested for a long period of time with these patients. It is the policy to cooperate with research workers from other institutions and several internationally-known research men (such as Dr. Woolley from the Rockefeller Institute and Dr. Altschule from Harvard University.) Recently, the NIMH granted the group of psychiatrists from Tulane University $75,000.00 per year for a period of five years to conduct research in mental illness in the Research wards of the Training Unit at the East Louisiana State Hospital.

In spite of the fact that this program was started just three years ago and the bulk of our trainees will not start to flow into our mental institutions and mental health clinics until next year, already the benefits of our State Training program can be seen. This training program, and in particular the Training and Research Unit, has changed East Louisiana State Hospital from a huge warehouse of mental patients to a place where dynamic and intensive treatment is conducted, a place where men and women are rehabilitated and quickly returned to society.

One hundred and twenty two years ago, Dr. William M. Awl, one of the founders of the American Psychiatric Association, concluded the first annual report of the Ohio Hospital for the Insane as follows: "The importance of remedial means in the first stages of insanity, cannot be too strongly impressed upon the public mind. That morbid excitement in the brain which accompanies the disease by long continuance, too often induces a change of structure incompatible with the future soundness of intellect, and renders the resources of medical science of little avail, except as palliatives. These facts are entitled to consideration, as indicating the proper course for arresting individual suffering. They are important also, in a pecuniary point of view. The sooner patients can be cured and discharged, the less expense to both friends and the public."

Today, at East Louisiana State Hospital, the staff has the thoughts of Dr. Awl very much in mind. They feel strongly that unless a patient is sent back to society as soon as possible, the chances for recovery diminish in direct proportion to the amount of time the patient stays in the hospital. Two things usually happen. In the first place, the hospital is a protective environment; the more the patient

becomes accustomed to it the more difficult it becomes for him to return to an active life in society. Secondly, the family of the patient becomes used to his being in the hospital, loses interest in him, and very soon feels the patient is a responsibility of the hospital and the State. This has been the case with many long-hospitalized patients that the Unit has been able to rehabilitate. They are ready to go, but the family refuses to take them back.

In the beginning of this paper it was said that East Louisiana State Hospital has been increasing in size because for years more patients were admitted than were discharged. This trend has finally changed, for in the last few months the Hospital has discharged more patients than were admitted. It is believed the Training Unit has something to do with this, not only because of the amount of patients who are rehabilitated every month, within the Unit itself, but also because of the new vitality that has been generated in the Hospital as a whole.

East Louisiana still has a long way to go. Its Intensive Treatment has been limited mainly to the white patients; now the Staff is beginning to extend services to the Colored wards and has established very successfully what could be called an embryo of the future colored male admission and Acute Intensive Treatment Unit. The Research and Training Unit, Tulane and the State Department of Hospitals are proud of this achievement. It has been proven that a large State mental institution can be changed from an atmosphere of custodial care to an orientation of dynamic and intensive treatment, and this never could have been achieved without an efficient training program. It is noted with satisfaction that some states (New York, Ohio) have arrived at the same conclusions. They are creating smaller training units within their large State mental institutions. They are creating a few research centers within these institutions, and are naming trained psychiatrists as Directors of Training and Research programs.

In the next few years when the bulk of trainees move into the State Hospital system, it is believed that the State of Louisiana will not take a back seat to any other in the treatment of mental illness.

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The American Public Health Association

The American Public Health Association will hold its eighth annual meeting in New Orleans, commencing Tuesday, December 7th, 1880, and ending Friday, December 10th, 1880.

Papers will be presented on Abbatoirs, Epidemics, Life Insurance in its relation to Public Health, The Storm-water question in City Sewerage, The Sanitary Engineering problems of the Mississippi River, The Hygiene of Emigrant Ships, The Prevention of Venereal Diseases, Voluntary Sanitary Associations, etc.

The special questions suggested for discussion at this meeting, in addition to those connected with the papers above referred to, relate to methods of preventing the spread within a town or city—after they have once been introduced—of such contagious or spreading diseases as diphtheria, scarlet fever, yellow fever, measles, small-pox, etc.

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The Management of the Diabetic

• The author stresses the psychological management of diabetes, especially that of children, so that the diabetic is not the victim of fears which alter the whole outlook on life.

MANUEL GARDBERG, M. D.
New Orleans

THE literature of diabetes is replete with papers which offer detailed discussions of the metabolic disturbance in diabetes mellitus, of its dietary management, of the virtues of various kinds of insulin, of the criteria of control, and of the complications of this very common disorder. Almost every aspect of diabetes mellitus has received a great deal of attention from scientific and pseudoscientific investigators and almost every aspect of the disease is involved in controversy. But one almost general, if tacit, agreement in the literature of diabetes can be discerned—an agreement to neglect the fact that the patient is a human being, who is not deprived by the diabetes of his hopes, his fears, his family responsibilities, and his friends and neighbors.

Thus, most discussions involve only the care of the diabetes—as if it were a disturbance in a chemical factory whose raw materials are carbohydrates, proteins and fats, and whose principal finished product is an acrid yellow fluid which is produced surreptitiously as if it were contraband of great value, yet for which no market has yet been found. Indeed, the object of the management of the disorder seems to be simply to keep the factory working (certainly a commendable aim) and to keep the quality of the yellow fluid up to certain standards, presumably so that it will neither corrode the sewers by which it is discarded, nor attract ants.

However, the patient is not simply an aggregate of chemical processes and life is not simply a mater of chemistry and physics. The patient is a human being and life is a matter of feelings—of hopes and fears, of illusions and realizations. The disturbance that occurs in his feelings when a patient is told that he has an incurable disease such as diabetes mellitus is a matter of the first order of importance.

Threat to Life

All too often the physician is not aware of the patient's mental processes. Perhaps he should indulge in a bit of instrospection. Insofar as the business of daily living is concerned do we not live, think and feel as though we were immortal? Of course we say that we know we are going to die; we even write wills; but we do not really accept this fact fully, or rather, do we not, for the most part, relegate it to a future so remote that our consciousness of the possibility of its occurrence becomes negligible? With the sudden death of a contemporary we become depressed. Can we deny that it is because we are temporarily shorn of our comfortable delusion—that for the moment we have been forced to face the fact that we too may soon go? While we soon escape again into the delusion by dismissing the news of a friend's death from our minds, we have had for a moment a taste of what most patients feel when they are told that they have an incurable disease such as diabetes or heart disease. But the patient cannot so easily restore his morale. Every medication and every restriction that is placed upon him and everything that he hears from his friends constitutes an assault upon the happy delusion of immortality under which most people live and which, in the last analysis, is the core of that

* Presented at the Seventy-ninth Annual Meeting of the Louisiana State Medical Society, in New Orleans, May 6, 1959.

which we call morale. He feels that he has entered upon the beginning of the end.

Threat to Normalcy

Second in importance to this is the need that everyone has to be like other people—to be "normal"—to be able to do as other people do—not differently.

Frequently, the physician fails to anticipate these reactions in the patient's mind and fails to deal with them. If he thinks that they are not present simply because the patient does not mention them or ask questions about them then he has not yet learned that frequently they ask no questions because they are afraid of the answers. Much of what the patient feels when he is told that he has diabetes is based upon misinformation that he has acquired beforehand, some is based upon inferences that his imagination mistakenly draws from the directions that the physician gives him. Whatever misinformation he does not already possess is generously supplied by his family and friends. Here we encounter the general phenomenon that people talk the most about that of which they know the least, and more specifically about medicine, for everybody likes to play doctor. More recently this phenomenon has been greatly enhanced by the innumerable newspaper columns, magazine articles, television shows and radio programs which furnish it with an endless supply of ammunition. This ammunition is apparently under great pressure for with the slightest mention of a medical subject the lid is off, and a great cloud of misinformation pours forth.

Among the pearls of wisdom to which the diabetic is treated are the following: "They are always in imminent danger of going into diabetic coma; they are always in danger of going into insulin shock; they become impotent. If they have any children they too will be diabetics, and *their* children will be diabetics; if they suffer wounds, they will not heal". An entire volume would be required to list the notions that he encounters. In short, his life, his ability to work, his sexual prowess, everything—hangs by a thread.

It is the purpose of this paper to point out that the most important object of the treatment of the diabetic is to make it possible for the patient to live within himself and without (for the two are inseparable) as normal a life as possible.

Reassurance

Accordingly, one should begin by assuring the diabetic that while diabetes is incurable, it is entirely correctible, for, if necessary, insulin taken in proper doses supplies him with what he lacks. Thus with proper care of himself he is a normal man—with so nearly a normal life expectancy that it is hardly worth while calculating the difference. All of the misinformation to which he will be exposed must be anticipated—he must be educated to ignore it. He must be taught that he needs only to learn to do those things that he has to do to take care of his diabetes a matter of habit (like shaving and brushing his teeth) and he may then go about the matter of daily living as though he were going to live forever.

He must learn that he is *not* constantly in danger of coma and other complications of diabetes. Certainly it is possible to teach diabetics to take care of themselves without overwhelming them with all of the possible complications at the first visit. The positive aspects should be emphasized first. The things that he needs to learn about complications can be taught later when he is not upset and will not exaggerate their dangers. The measures employed to control the metabolic defect must be bent about the primary purpose of achieving a healthy adjustment individually for each patient. In general this implies that the simplest possible methods should be used. The diet should be prescribed in the simplest possible terms, the hypoglycemic agent employed should be administered in the least burdensome manner and the criteria of control should not be so exacting that they constitute a constant threat. The patient should be taught to take care of himself and should not have to see the physician frequently.

Control

Certainly, it is not necessary to enforce rigid metabolic control immediately if at all. Emphasis should first be placed upon psychological adjustment. When this has proceeded satisfactorily more rigid control can be achieved at a later date without demoralizing the patient.

Here we encounter the notion that poor control of the diabetes is responsible for the various complications of the disease. This is a controversial matter and I had hoped in this paper to avoid controversy. To that end let us assume (erroneously) that the notion is factual. In that case the object of treatment should be the maintenance of as little glycosuria as possible. In the attainment of that end cooperation by observance of the prescribed regimen is important. It is a matter of experience that with most patients better cooperation is furnished with a regimen that is comfortable than one that is so restrictive that it is burdensome. In the latter case the patient is apt to kick over the traces altogether, rebelliously declaring that he may not live as long but "by God, while he does live he is going to *live*". The end result is that there is poorer control than might have been achieved with a more lenient regimen. Of course this is an individual matter, some patients make a fetish of the regimen.

Psychological Management in Children

With children the consequences of poor psychological management are even more far-reaching. Those who encourage parents in forcing a child to adhere to rigid restrictions create in the parents' minds excessive anxiety regarding the occurrence of coma, and of insulin shock. Such parents are overly protective of the diabetic child and at the same time, in their excessive sympathy for the child, they fail to discipline him—in the mistaken notion that the diabetic child must be given special consideration to make up for his misfortune. The child who grows up in such an emotional atmosphere is insecure and anxiety-ridden because the special privileges impress upon him the fact that he is different from others as much as do the restrictions. He frequently becomes rebellious against this difference between himself and others and against the restrictions that it imposes. His hostility toward the overly restrictive parents is not limited by the special privileges that he is given in compensation. He has difficulty in getting along with his fellows. He frequently deliberately neglects his diabetes to create anxiety in his over-anxious parents, to get even with them. Others are completely cowed and live lives of continual anxiety and frustration. The disturbance in personality that results may not be obvious until the late teens.

The influence of the emotional disturbance upon the metabolic disturbance is frequently disastrous. The unstable, rebellious, anxious individual is subject to wide swings in his moods. With these, come wide swings in his attitude toward his regimen. Sometimes he observes it closely, in a more resentful mood he disregards it altogether. Such persons frequently show grave ocular, vascular and renal complications but whether the complications are related causally to the emotional disturbance more directly or to the poor control of the metabolic disorder that results from it cannot be determined in any single case. Certainly there are patients whose diabetic control is poor, yet who suffer no complications.

Adolescence

From the psychological viewpoint the most dangerous time of life for the discovery of diabetes is adolescence. This is the time when the individual is going through the process of establishing confidence in himself, when he needs every resource that he can find within himself to sustain him in his attempt to feel that he can soon assume adult independence, adult responsibilities, and that he no longer needs to lean on his parents emotionally. It is the period in which he frequently attempts to reject parental authority a bit prematurely. He is frequently openly hostile to his parents for he is employing them as a symbol for the deep inner de-

pendence which he has not yet outgrown and which he must conquer. When diabetes appear in the midst of this scene it may come as a great blow and unless managed properly the individual may be driven back to his earlier complete dependence upon the parents or the emotional development may be arrested at that point. The behavior of the parents at this time is of paramount importance.

The adolescent must be intensively indoctrinated in the proposition that diabetes, though not curable is a correctible disorder—and that it will not affect his ability to stand on his own feet. For this purpose words alone will not suffice. The method of management must carry the same message. It should be placed in the hands of the patient to the maximum extent possible. An overly restrictive regimen must be avoided for it will make the patient feel that he is a sick person and under these circumstances it is difficult for the adolescent to have sufficient confidence in himself to go forward in his struggle for emotional independence. The parents should be given a minimum of responsibility for it. The parents' fears must be allayed; and they must be taught to interfere as little as possible in the management of the diabetes and in the patient's activities. Great tragedies occur when parents are emotionally incapable of avoiding overprotection of the children.

This paper attempts to direct attention to the human aspects of the management of the diabetic patient. It contains but the expression of opinions derived from a large experience with diabetics who have been closely observed by one physician as they lived through a generation of time; some from infancy to parenthood, some from adolescence to middle life, some from middle life to a advanced age. These opinions were formed within the area that will some day be remembered as the "private practice of medicine"; without the benefit of a grant, and without the benefit of the statistical approach; and they have been expressed without the employment of lantern slides. Lacking these cardinal requisites this effort cannot qualify as a "scientific" paper. By the same token the writer is spared the necessity of furnishing a Summary or Conclusion.

Discussion

Dr. A. A. Herold, Sr. (Shreveport): It was with considerable hesitation, bordering on reluctance, that I accepted the invitation to discuss a paper by so distinguished an authority as Professor Gardberg. When Dr. Gardberg was kind enough to supply me with a copy of his talk, I was relieved to learn that it did not deal with the therapy or dangers of diabetes from a medical standpoint, wherein he probably would have castigated some so-called authorities on the subject, but rather he has devoted most of his paper to the psychology of handling the cases, especially the very important childhood diabetes —which standpoint he has handled most excellently, as is usual with him, although I did not know, before, that he practices psychiatry.

Regarding this last object, namely juvenile diabetes, I have had considerable experience, dating back before and at the time of discovery of insulin. I recall the early days of insulin therapy—before it was available commercially —when parents became hysterical if a child developed signs of hyperglycemia; I recall the early days of this epoch when all food had to be measured and the patient was required to eat it **all**, regardless of whether or not the food was agreeable to the taste. Calories had to be exact and this did not always prove psychologically good for the victim. Now, that we are a little more liberal, one authority said "The diabetic child should not know that a banana or apple exists", and at present allows even sugar on the tray to appease the appetite.

Dr. Gardberg's essay is full of valuable advice and I hope everyone of my hearers will read it carefully, when published.

I wish to commend him, especially, for his closing paragraph, wherein he, in violation of the accustomed routine, announces that he is not showing any slides nor does he consider it necessary to furnish a summary of his remarks.

Experience With Bunamiodyl (Orabilex)®-- A New Cholecystographic Medium

• The success with Orabilex was outstanding in 551 patients of the 623 to whom it was given. In only 18 the gallbladder failed to visualize, and in 14 visualization was poor.

SEYMOUR FISKE OCHSNER, M. D.
A. SELDON MANN, M. D.
New Orleans

PHYSICIANS must be constantly on the alert for improved methods for examinations that have become standardized because of their importance and frequent usage. Such an examination is cholecystography. This study was undertaken to evaluate the efficiency of bunamiodyl (Orabilex), a newly developed medium for radiographic visualization of the gallbladder.

Cholecystography has been a useful method of evaluating the gallbladder since it was introduced in 1924 by Graham and Cole.[1] Refinements in radiographic equipment and technic have improved the quality of roentgenograms. Improvements in opaque media have enabled better visualization of the gallbladder and a higher incidence of correct diagnoses.[2-6] At present the accuracy of cholecystographic diagnosis is extremely high if roentgenograms are carefully made and accurately evaluated.

Early reports indicated that Orabilex provided satisfactory opacification of the gallbladder with minimal serious reactions or unpleasant symptoms.[7-9] We have now given the standard dose of 6 capsules (total of 4.5 Gm.) to 623 consecutive patients having cholecystography in one medical section of the Ochsner Clinic.

Method

Six capsules of Orabilex were ingested on the evening before the radiographic examination. Roentgenograms were made twelve to fifteen hours later. Most patients were instructed to eat a light evening meal containing no fatty food, to omit breakfast, and to appear for examination at 9:00 A.M. Others were permitted to eat a light, fat-free breakfast, omit lunch, and come for examination at 1:00 P.M. Either schedule seems to be satisfactory.

Initial roentgenograms were obtained with the patient prone on the radiographic table, in postero-anterior and oblique projections. After a simulated fatty meal with Cholex,® additional roentgenograms were made one hour later, with the patient in prone, oblique, decubitus or erect positions. As processed, the roentgenograms were studied and appropriate modifications were made so as to obtain views of the organ completely clear of obscuring superimpositions of ribs, gas, or other shadows.

After obtaining the films, the technician questioned the patient about various symptoms and recorded them on a worksheet which accompanied the examination request card. After interpreting the roentgenograms, the radiologist completed on this same sheet information regarding the quality of opacification, positive diagnoses, residual medium in the colon, need for re-examination, and the like. This information has been collected and tabulated.

Results

Visualization of Gallbladder. Opacification of the gallbladder is the most important factor in evaluating any contrast medium to be used in cholecystography.

From the Departments of Radiology and Internal Medicine, Ochsner Clinic, New Orleans.

The success with Orabilex was outstanding. Visualization was good in 551 of the 623 patients. In 40 additional patients visualization was fair, being sufficient in each case to permit satisfactory interpretation. This means that in 591 patients (95 per cent) the gallbladder was satisfactorily visualized.

In 14 patients visualization was poor, and in 18 the gallbladder was not visualized. Subsequent study of the clinical records of these 32 patients disclosed that there was usually a significant reason for failure of opacification (Table 1).

TABLE 1
CONDITIONS PRESENT IN PATIENTS WITH NO OR POOR VISUALIZATION

	Poor Visualization	Non-Visualization
Radiopaque gallstones present	2	5
Radiolucent gallstones present	7	—
Previous operation	0	2
Cholecystitis (surgical proof)	2	3
Gallstones (surgical proof)	1	2
Significant hepatic disease	1	2
Biliary colic at time of examination	0	1
Gastric retention of medium	0	1
Gallstones seen in later examination	0	1
No explanation discovered	1	1
	14	18



Figure 1.—Normal cholecystogram with Orabilex.

The results seem to justify confidence in the ability of Orabilex to produce visualization in normal (Fig. 1) or relatively normal gallbladders. Poor or absent visualization in a patient with satisfactory hepatic function indicates an abnormal gallbladder or cystic duct, especially if prompt reexamination still does not reveal a cholecystic shadow.

Visualization of the Biliary Ducts. Although no special effort was made to visualize the ductal system, the ducts were at least partially revealed in 40 per cent of the cases (Fig. 2). This ductal visualization is in part a product of fairly dense opacification of the gallbladder. Some observers believe that a dense shadow will obscure small stones in the gallbladder, and we have noted temporary obscuration in two instances, in which small, faintly calcified stones were initially overlooked. This occurred in thin patients who received a full dose of 6 capsules of Orabilex. It is possible that it would be preferable to give only 4 capsules to persons weighing less than 120 pounds. Individual preferences will have to determine this issue, the desirability of seeing the ducts in many cases as opposed to the dis-



Figure 2.—Normal gallbladder and visualization of extrahepatic biliary ducts with Orabilex.



Figure 3.—Cholecystogram with Orabilex reveals a gallbladder largely filled with radiolucent stones and a small segment of a normal common duct.

advantage of possibly obscuring small stones (Fig. 3). Varying the dosage schedule in relation to the patient's weight and obtaining a film of the gallbladder before administration of the contrast medium are ways of minimizing the possibility of overlooking small gallstones.

Untoward Reactions. In persons already experiencing distressing symptoms from disease or nervousness, it may be difficult to evaluate the symptoms they attribute to ingestion of contrast medium. Nevertheless, we have attempted to do this and have included all definite complaints the patients thought were due to the Orabilex. Five hundred forty-seven patients (87.8 per cent) had no unpleasant side effects.

TABLE 2
ILL EFFECTS ATTRIBUTED TO ORABILEX IN 623 CASES

	Cases	Per Cent
Nausea	38	6.1
Epigastric pain	10	1.6
Diarrhea	8	1.3
Vomiting	7	1.1
Intestinal cramps	7	1.1
Skin reaction	4	0.4
Dysuria	2	0.3

The complaints in the remaining patients are listed in Table 2. In no case was the reaction severe. The relative infrequency of ill-effects and the mildness of those that did occur are noteworthy. From the patient's viewpoint, the infrequency of intestinal cramping and distressing diarrhea is a real improvement over other agents previously employed.

Residual Contrast Medium in Intestinal Tract. When Orabilex is identifiable in the small intestine or colon, it usually appears as a milky opacity. In no case was the examination unsatisfactory because of it. This type of residue is more desirable than the dense, granular appearance presented by some cholecystographic media. The granular densities may mimic or obscure small renal stones, or, if superimposed upon the gallbladder, they produce a confusing picture.

Excretion of Orabilex in Urinary Tract. Studies of Lasser and coworkers, using bunamiodyl tagged with radioactive iodine, indicate that about 25 per cent of the administered dose is excreted in the urine. In the process of excretion, no damage to the kidneys has been reported. The material is present in the urine, of course, and its presence there may result in a false reaction for albuminuria. This pseudo-albuminuria has been recognized as a possible result from other cholecystographic agents. Naturally, the incidence of the reaction is greater when a larger percentage of the contrast material is excreted through the urinary tract. Consequently, the urine should not be examined for albumin on the day after Orabilex has been taken for cholecystography.

Positive Diagnoses in this Series. Gallstones were discovered in 72 patients (11.5 per cent) and possible stones were noted in an additional 14 (2.3 per cent). The presence of mucosal lesions was suggested in 15 patients (2.4 per cent) and Aschoff-Rokitansky sinuses in 2 (0.3 per cent).

Summary

Orabilex, a new cholecystographic medium, was evaluated after its use in 623 consecutive cholecystograms from one

medical section at the Ochsner Clinic. Good visualization was achieved in 95 per cent of cases. Poor or nonvisualization was usually the result of some abnormal condition of the patient. No unpleasant side effects were noted by 87.8 per cent of patients. In the remainder side effects of epigastric pain or diarrhea, vomiting, intestinal cramps, dysuria or cutaneous reactions were mild. Elimination of contrast medium in urine may produce pseudo-albuminuria on the day of examination. At present, we consider Orabilex the cholecystographic medium of choice because of its low incidence of mild reactions and high incidence of satisfactory visualization of the gallbladder and occasional visualization of the extrahepatic biliary ducts.

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Dengue

By S. M. Bemiss, M. D.

Professor of Theory and Practice of Medicine and Clinical Medicine

A few days ago I promised some of the gentlemen of the class to tell them how much, or how little, I know of dengue. If, simply observing, or even treating a large number of cases of a given form of sickness gave one competent information respecting its essential nature, I might then be qualified to give you a much more accurate account of dengue as a substantive disease, then I am now able to lay before you. * * *

The term "dengue" as a designation of a particular affection, is differently accounted for. It has been said that this is a Cuban word for cloak, and that it is applied to this disease because of the chilly sensations attending its advent. The best accepted account of the origin of the word is that the term "dandy fever" was first given to the disease by the negroes of Jamaica or Trinidad from the peculiar affected gait of persons attacked by it and was afterwards corrupted into "dengue." There are many synonyms for the disease, "scarlatina rheumatica" is one of the oldest and most interesting to you—because it shows the prominent part accredited to the eruption as a symptom of the early history of the affection. "Breakbone" fever is a common vulgar name applied to the malady—and those of you who have already suffered with attacks, will say that it is not an inapt designation.

New Orleans M. & S. J. 8:501 (December) 1880

Prevention of Strokes*

• It is important to make an accurate diagnosis in cerebral ischemia, and angiography must be relied upon in order to map the location of the occlusion and plan intelligent treatment.

ALTON OCHSNER, JR., M. D.†
New Orleans

IN view of the great strides that have been made in preventive medicine in America, it is only logical that we should consider prevention of our third greatest killer—strokes. Approximately 200,000 deaths annually are related to this condition. Of equal importance, however, is the fact that 2,000,000 living Americans have survived strokes, many having been left, however, with residual incapacitating neurologic deficits.

A stroke may occur without warning, but fortunately about three-fourths of the patients have preliminary symptoms which, if properly heeded, should permit institution of preventive measures. In most cases, symptoms are transient and recurring. In others they may be slowly progressive.

Factors Influencing Cerebral Ischemia

It is well known that strokes are caused by thrombosis (65 per cent), hemorrhage (30 per cent) and arterial embolism (5 per cent), but in all the basic underlying condition seems to be ischemia of cerebral tissue. It behooves us, then, to direct attention to the factors that influence cerebral ischemia. These include the volume flow of blood, the oxygenation of the blood and the metabolic requirements of the brain. The cerebral blood flow is directly proportional to the systemic blood pressure, which, in turn, is influenced by the cardiac output, the total peripheral resistance of the general vascular system, and reflex control involving the vasomotor center and carotid sinuses. Decrease in blood pressure, even to a normal level, may initiate symptoms of cerebral ischemia. Such a drop can be produced by oversedation, vasodilatory or antihypertensive drugs, cardiac arrhythmias, or myocardial weakness. Even activity may shunt blood away from the head to more active regions, such as the legs. Vascular resistance to flow is determined by the degree of intra-arterial obstruction, the vascular tone of the smaller vessels, venous pressure and cerebrospinal fluid pressure, and the viscosity of the blood.

Arterial occlusion may be the result of intraluminal obstruction, compression or angulation. Obstruction may be caused by an atheromatous plaque or intimal thickening after arteritis or infection, a thrombus or embolus, or a dissecting aneurysm. Compression may be the result of spasm, scar, tumor, such as neoplasm or hematoma, and even the trachea in cases of anomalous origin of the artery. Angulation is due to arteriosclerotic elongation of the vessel.

The location of the occlusion is important. The most common site of atherosclerotic plaques in the head and neck is the proximal portion of the internal carotid artery and common carotid bifurcation; the origins of vertebral and middle cerebral arteries follow next in order. Of course, any portion of the arterial tree may contain a stenotic or occlusive lesion. There is also the rare but interesting condition of obstruction at the origin of the vessels of the aortic arch (pulseless disease, Takayasu's disease, Martorell syndrome). Clinically, one-fourth of the patients with cerebrovascular disease can be shown to have extracranial occlusions [1]

* Presented at the Eighteth Annual Meeting of the Louisiana State Medical Society, May 3, 1960, in Baton Rouge.

† From the Department of Surgery, Ochsner Clinic, New Orleans.

and at necropsy the incidence is as high as 50 per cent.[2]

The degree of occlusion is, of course, equally important since a decrease in diameter of the vessel of about 50 per cent is required to alter its flow significantly.[3] There may be, however, no difference in the symptoms associated with stenotic or occluded vessels. In either situation the patient may have no symptoms, transient symptoms, or symptoms of a gross infarct, depending upon collateral circulation.

The collateral circulation, therefore, is extremely important. It is partly developmental and partly acquired. In relation to the developmental aspects, we are essentially concerned with the anatomy of the circle of Willis. Anatomic studies of Kirgis and associates[4] indicate that the variations that occur in the circle of Willis are extremely important in determining how well a patient will tolerate occlusion of one of the major vessels, such as the internal carotid artery. The textbook picture in which all vessels are of fairly adequate size and patent is, to be sure, an unusual one. The most common pattern has small but patent posterior communicating vessels, there being essentially no flow through these vessels, however, because of the balance of pressures in the carotid and vertebral systems. In the most critical type of variation, "fetal trifurcation," the internal carotid artery on one side supplies the anterior, middle and posterior cerebral vessels with little or no connection to the vertebral system. Another significant variation is the "anterior trifurcation," in which the internal carotid artery, in addition to supplying the middle cerebral, has a big anterior vessel which divides to form both right and left anterior cerebral vessels. In this situation, the internal carotid on the opposite side supplies the posterior cerebral, as well as the opposite middle cerebral artery.

The acquired collateral circulation varies, depending on the location of the arterial occlusion within the internal carotid artery. The three main pathways are (1) from the external carotid to the internal carotid on the same side via the ophthalmic artery, (2) via the occipital branch of the external carotid and occipital muscle branches of the vertebral. There is also (3) rich anastomosis between the vessels of the pia on the surface of the brain.

Oxygenation of the blood is related to the amount and saturation of hemoglobin. The metabolic needs are related to cerebral function (i.e., cellular enzyme activity), body temperature and availability of oxygen and glucose. Age has no influence on cerebral ischemia.

Symptoms

Symptoms of cerebral ischemia, therefore, are dependent upon numerous factors. However, in general, certain symptoms occur which suggest carotid arterial insufficiency and others basilar arterial insufficiency. The former is usually manifested by paresthesias, perhaps some paresis or even paralysis of an arm and leg on one side. The patient may be dysphasic of aphasic. When the dominant hemisphere is undergoing ischemia on the ipsilateral side, amblyopia, amaurosis or hemianopsia may be present. Disorientation or confusion, convulsions, headaches, possible syncope or psychiatric disorders may occur. In more advanced cases, particularly those that involve the origin of the arteries as they leave the aortic arch, one may find masticator claudication, tinnitus, skin muscle atrophy of the face, and Horner's sign. The most diagnostic symptoms for carotid arterial insufficiency are ipsilateral visual defects and contralateral sensory and motor disturbances involving the arm and leg, but a combination of symptoms is seen in only 10 per cent of cases.[5]

Basilar arterial insufficiency is most likely to be manifested by dizziness and ataxia, weakness, nausea and vomiting, diplopia, nystagmus, and cranial nerve deficits. However, basilar arterial disease can produce symptoms believed to be typical of carotid arterial insufficiency. If these symptoms vacillate from one side of the body to the other, however, basilar arterial insufficiency is the most likely

diagnosis. Knowledge of the symptoms that can be associated with occlusion of any artery is really of limited value in making an anatomic diagnosis, but the presence of any of them should alert one to the possibility that cerebral ischemia may exist, and the proper investigation can be undertaken.

It can be easily appreciated that the same symptoms of cerebral ischemia may be caused by conditions other than vascular disease, so that an accurate diagnosis is extremely important. Even in the presence of demonstrated vascular disease, one must be sure that the patient does not also have a brain tumor, subdural or intradural hematoma, multiple sclerosis, collagen disease, syphilis, angiomatous malformation, porphyuria, or thoracic outlet syndrome.

Diagnosis

Some information, of course, may be gained clinically about the presence, degree and location of arterial occlusions which might be producing cerebral ischemia, but the only procedure that will permit a definite anatomic diagnosis is angiography. The volume of the vascular pulses, presence and absence of murmurs over the vessel, and ability to withstand unilateral carotid compression, all give information but this may be anatomically misleading. Ophthalmodynamometry gives some more direct evidence.[6] By this means the retinal arterial pressure is measured bilaterally, and a significant difference between the two sides indicates decreased pressure in the ophthalmic artery which is, of course, a branch of the internal carotid artery within the skull. This suggests a high degree of stenosis of the internal carotid artery on that side. Electroencephalographic tracings, particularly with use of the tilt table, show changes but they are relatively nondiagnostic.[7]

One must always rely on angiography in planning intelligent treatment. With modern technics it is safe regardless of the age of the patient.[8] It is, of course, important that as complete arterial mapping as possible be obtained, including visualization of the intracranial arteries, so that one may be able to see the nature of the filling and interpret the anatomy of the circle of Willis. From a practical standpoint it is not easy to visualize all the major arteries supplying the brain; therefore, bilateral carotid arteriograms are always done first. Vertebral arteriograms are reserved for patients with symptoms suggestive of basilar arterial insufficiency or those patients with symptoms of cerebral ischemia in whom no lesions are found on carotid arteriography. Of course, if the results of the physical examination are suggestive of the possibility of more proximal occlusion near the arch of the aorta, then thoracic aortography is done to visualize this area as well.

Treatment

Prevention of subsequent strokes depends upon adequate treatment after accurate diagnosis. Each patient must receive individual care, depending on the nature and extent of the disease. Because of the many ramifications of such care, it is not possible for one physician to give optimum care to every patient. For this reason, at the Ochsner Clinic we have evolved a plan whereby the patient is evaluated by a team consisting of a neurologist, neurosurgeon, vascular surgeon and an internist particularly interested in hypertensive disease.

Fortunately, there are now several available modalities of treatment. Among medical measures are prolonged administration of anticoagulants, chemical sympathectomy, vasodilator drugs, tranquilizers, abstinence from smoking, and treatment of related medical conditions. Anticoagulants have been shown to have some protective value but should not be given to all patients because the risk of hemorrhage is real. They are not a substitute for thrombo-endarterectomy, when this can be done, as they do not prevent the atheroma from growing and may even precipitate a hemorrhage beneath the plaque. They should be given, however, when surgical treatment is unsuccessful or when vascular disease is diffuse. Sym-

pathetic nerve blockage has proved to be of value to relieve some acute symptoms of cerebral ischemia. Vasodilator drugs have limited value. Cerebrovascular musculature is relatively unresponsive and, apparently, only papaverine and carbon dioxide will dilate the cerebral vessels. Tranquilizers will help tense, anxious patients. There is also some experimental evidence that they may retard development of atherosclerosis.[9]

Treatment of certain medical conditions may also be helpful. These include hypertension, diabetes, polycythemia, thromboycythemia, anemia, anoxia, hypercholesterolemia, syphilis, obesity and heart disease that may be associated with embolic phenomena. The problem of hypertension in these patients is a special one. On the one hand, the increased blood pressure is known to increase the atheromatosis and, of course, always poses a threat of a hemorrhagic stroke. On the other hand, vigorous treatment of hypertension without removing the intra-arterial occlusion may lead to poor cerebral perfusion and thus precipitate a stroke. Hypertension in these patients may be, to a certain extent at least, compensatory. In one patient we noted drop in blood pressure after operation on the carotid artery. This may be the result of improving the effectiveness of the carotid sinus reflex.

If localized occlusions in extracranial vessels can be identified, thrombo-endarterectomy should be done in these areas. This is relatively safe now,[10] as it is done with use of a local anesthetic, and if the patient does not tolerate clamping of the common carotid artery, a temporary plastic shunt or the perfusing of oxygenated blood into the distal internal carotid is carried out while the operation is being performed. We have now done carotid endarterectomy on 35 patients, in 23 of whom symptoms have been completely relieved or greatly improved. The best results are in patients who have only stenosis and are having recurrent transient symptoms. Results are poor if the artery is completely occluded. There may be some salvage after the cerebral infarct has occurred but this is dependent upon prompt (preferably within a few hours) treatment. After a matter of days nothing is to be gained. The best treatment is preventive. The time to institute investigation and treatment is before the stroke occurs, when the patient is having warning signs of cerebral ischemia.

It is to be hoped that the problem of strokes will recapitulate that of poliomyelitis, and that we will start thinking and acting in terms of preventing rather than treating the stroke, but to do this we physicians must convince ourselves that we can do this. Only then will we sharpen our diagnostic acumen to the point where we will recognize the patient who is having only transient cerebral ischemia.

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Discussion

Dr. John D. Jackson (New Orleans): I wish to congratulate Dr. Ochsner on his excellent presentation. Since cerebrovascular disease is one of the common causes of death, it is a subject of vital interest to us all. Approximately one-fourth of all patients with cerebrovascular disease have symptoms due to stenotic or occluded carotid and vertebral arteries. Our interest is principally in this group because it is in these that the most can be accomplished.

Dr. Ochsner has outlined a plan of treatment of strokes. I would like to re-emphasize the role of angiography in the management of these patients. Angiography is necessary to confirm the

diagnosis and to establish the site of occlusion if the stroke is due to obstruction or stenosis of the carotid or vertebral artery.

The technic of angiography differs, depending on whether the carotid or vertebral artery is to be visualized. However, both procedures are done with use of a local anesthetic and the average premedication dosage of ⅙ grain of morphine sulphate, 1/150 grain of atropine sulfate and 2 grains of sodium luminal given forty-five minutes beforehand. About thirty minutes is required to complete the procedure.

To perform carotid angiography, the carotid artery is cannulated percutaneously with a No. 18 needle just above the clavicle. Usually, only two 10 cc. injections of contrast medium are necessary on each side to demonstrate the carotid artery in the head and neck. For vertebral angiography, one of two methods may be used. The subclavian artery may be cannulated by a percutaneous injection through the superclavicular region. When the dye is rapidly injected into the right subclavian artery with a tourniquet on the extremity of that side, it passes in a retrograde manner in the subclavian artery and flows up the vertebral artery.

The other method is to expose the brachial artery or its radial branch and pass a cardiac catheter up the artery into the subclavian artery to the origin of the vertebral artery before injection of 10 cc. of contrast medium.

How safe is angiography? We consider it a safe procedure and use it routinely in most patients with symptomatic cerebrovascular disease. We do not consider old age a contraindication in itself. It is true that many complications of cerebral angiography, including death, have been reported. However, most reported complications have been due to the irritating effects of the contrast medium. A less irritating medium is now used with proportionately less difficulty.

One year ago we made a study of more than 200 cerebral angiograms; the results of this study were reported in the Journal of the Louisiana State Medical Society. The complications included 5 cases of transient hemiparesis, which subsided in less than four hours. Three patients had a convulsion during the procedure, which lasted less than two minutes and left no detectable residual. Several patients had urticaria, which was relieved by intravenous administration of Benadryl®. Most patients complained of a sore, stiff neck the next morning but this was transient.

I would estimate that during the past year about 100 angiograms have been made at the Ochsner Clinic. In this group 2 patients had severe reactions. In one patient with severe cerebrovascular disease hemiplegia developed after angiography. The other patient became hemiparetic and confused six hours after angiography but this completely disappeared after thirty-six hours. These are the only severe reactions that occurred among all patients who had angiograms in the past three years at the Ochsner Clinic. Both patients were in critical condition before angiography. Consequently, there is some debate concerning the part angiography contributed to the change in the clinical state of the patients.

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Editorial

Immunization With Influenza Virus Vaccine

Influenza continues to produce widespread, but an indeterminate amount of morbidity, and also, is the cause of a definite, and statistically recognizable mortality. For this reason, clinicians have advised and carried through protective immunization on a small scale with gratifying results. Experience in this field has been intensified and the benefits of the procedure clearly indicated by results obtained in the 1957, 1958, and 1960 epidemics of influenza.

The first two outbreaks resulted in 60,000 more deaths than would be expected under normal conditions. The third outbreak occurred during the first three months of 1960 and caused 26,000 excess deaths. These were considered to be the result of influenza. These departures from the usually predicted norms prompted the Surgeon General's Advisory Committee on Influenza Research to analyze the cause and seek measures to prevent such an occurrence in the future.

The committee considered that the new antigenic variant, the Asian strain, was the direct cause of the excess number of deaths, not only in the total population, but most markedly among the chronically ill, the aged, and pregnant women. Accordingly, the Public Health Service is urging a continuing program of virus vaccince inoculation to protect these high risk groups, in order to prevent a recurrence of this excess mortality.

In each of three epidemics the population over 65 accounted for more than half of the number of excess deaths. It is recommended that the following should be routinely immunized each year:

1: All persons 65 years or older.

2. Pregnant women.

3. Persons of all ages who suffer from chronic debilitating disease, in particular, the following: (a) rheumatic heart disease, especially mitral stenosis; (b) other cardiovascular diseases, such as arteriosclerotic heart disease or hypertension — especially patients with evidence of frank or in-

cipient insufficiency; (c) chronic bronchopulmonary disease, for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, or pulmonary tuberculosis; (d) diabetes mellitus; (e) Addison's disease.

Nearly 90 per cent of the excess deaths were attributed to two categories of conditions: pneumonia - influenza (40 per cent) and cardiovascular-renal diseases (46 per cent).

Numerous properly controlled studies have shown that the vaccine is about 70 per cent effective in preventing the disease. Some investigators feel that it is as much as 77 per cent effective. One group of investigators reports that the injection of a single strain evokes in the adult person an antibody-recall mechanism previously established by initial childhood antigenic experiences with related influenza viruses. The new injection bolsters antibody levels against viruses from that family of strains, and provides some degree of protection against influenza caused by a new variant. The time of protection begins in about two weeks.

Another group reported that after six months there is a considerable decline in antibodies. Immediate response was in proportion to the amount of antigenic substance given. The dose recommended is 500 CCA units per cc. (chick cell agglutination units). This is contained in 1 cc. and is to be given subcutaneously, administered on each of two occasions separated by two or more months. Preferably this schedule of vaccination should be completed by November 1, each year.

Contraindications are recognized among persons who are unable to eat eggs or chicken because of food allergy, or who are known to have had a definite allergic reaction, whether urticarial, asthmatic, or anaphylactic, on previous inoculation of an egg vaccine. In adult populations there is a low incidence of reactions which may take the form of transient febrile response or local tenderness at the injection site, and within twelve to thirty-six hours some of the respiratory symptoms as though the individual might be taking an acute cold. Penicillin is not used in preparation of the vaccine and sensitivity to this substance would be of no concern in giving the vaccine.

The Public Health Service has issued licenses to eight of the large and dependable pharmaceutical houses, who are producing vaccines of proper strength and suitable composition.

The experience of certain clinicians indicates that the vaccine is protective against acute upper respiratory infections, not necessarily proven to be due to influenza, and that many individuals whose immunity to a given infection lasts only a few weeks are benefitted by monthly injections of the influenza virus vaccine. In such situations, the vaccine makes the difference between constant disability and comparative comfort.

This continuing program of routine annual influenza immunization of high risk groups, sponsored by the Public Health Service, is not directed at the public nor is it an appeal for mass immunization. It is an appeal through established channels of communication to physicians to add influenza vaccination for the aged and chronically ill to the established practices of immunization, just as such programs are being used against diphtheria, pertussis, and tetanus. The program rests on a basis of adequately controlled experimentation, group testing, and clinical experience. It can be of great assistance to the aged and infirm. It should be utilized by physicians generally.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

PRESS AWARDS

It is time to send in your nominations for our Annual Press Awards. These awards are presented each year to daily and weekly newspapers who publish outstanding articles, features, editorials or series of original articles dealing with health and medicine. Winners will be selected at or immediately prior to our Annual Meeting.

A DAY TO BE REMEMBERED

The Surgical Association of Louisiana will hold their Annual Meeting on Sunday, November 20th, 1960 at Sheraton-Charles Hotel. Dr. Henry T. Bahnson, Associate Professor of Surgery, Johns Hopkins University, and Dr. R. B. Turnbull, Department of Surgery, Cleveland Clinic, Cleveland, Ohio will be the out-of-state speakers in addition to a number of speakers within the state.

A splendid program has been prepared and a good attendance expected. There will be a banquet for members and their wives and guests at 8:00 P.M. Tickets can be obtained at the registration desk.

Don't forget the date and attend, thereby, supporting your organization. A scientific treat along with a most enjoyable day and evening awaits you.

REPORT OF FIRST REGIONAL RURAL HEALTH CONFERENCE OF THE SOUTHERN STATES

On October 7th and 8th, 1960, the First Regional Rural Health Conference was held in Atlanta, Georgia, and Louisiana was represented by Dr. F. P. Bordelon of Marksville and me, although Dr. Ralph V. Platou, Professor Pediatrics of Tulane University served on a panel.

On Friday morning the meeting opened with an invocation and then greetings from the Medical Association of Georgia by Milford B. Hatcher, M. D., president of the association, in which he spoke on Health Promotion of the state of Georgia.

Dr. F. A. Humphrey, chairman of the Council on Rural Health of the A.M.A., spoke on the "Definition of Purpose" in which he told of the birth of the organization in 1945. At this time the chief topic was "Help Rural People to Help Themselves".

The next speaker was M. O. Watkins, Ph.D., Director of Agricultural Extension Service of the University of Florida. The theme of his talk being "Joining Hands for Community Health". He extended compliments to the A.M.A. and the Council on Rural Health for their great work and explained how progress meant adjustments and this in turn meant more problems, which dealt in mechanization of farms causing loss of jobs. This in turn causing varied problems including health problems. He explained the functions of the different government agencies or organizations and how each has its own objects and contributes to the health and welfare on its own constituents but all joining in a common program in preventive measures in safety and the conservation of health. He explained the hazards of farm machinery and implements and of the use of pesticides in which all are essential to the economical production of farm produce, but may be dangerous to the health and welfare of the farmer. He then went into the dangers of animal diseases.

Next on the agenda was a skit of doctor, mother, and child which explained the administration of the vaccines for the different contagious diseases, especially those of childhood.

Then James Lieberman, D.V.M., Assistant Chief Training Branch, Communicable Disease Center of Atlanta, discussed Animal Disease and Human Health conditions. Discussed were Psittacosis, Rabies, Tularemia, Anthrax, Encephalitis, Bovine Tuberculosis, Brucellosis, Trichinosis, Tape worm, Hook worm and Mycotic diseases. He also went into the effects of human consumption of milk from cattle being given antibiotics and allergic reactions produced.

Following this was another skit entitled "Joining Hands For Healthy Environment."

Cast: P.T.A. President
Mrs. Charles D. Center
Health Education Consultant
Georgia Department of Public Health, Atlanta

Town Mayor
Mr. Jesse C. Norman, Jr.
Program Management Officer,
Training Branch, Communicable Disease Center, Atlanta

County Health Officer
John McCroan, Jr., Ph.D.
Asst. Director, Epidemiology
Georgia Department of Public Health, Atlanta

State Health Officer
Mr. William A. Hansel, Director,
Local Health Administration Services
Georgia Department of Public Health,
Atlanta

U. S. Public Health Service Officer
Mr. Donald Schilliessmann, Chief
State Aid Section, Technology Branch,
Communicable Disease Center, Atlanta

The afternoon session was presided over by W. Wyan Washburn, M. D. of Boiling Spring, South Carolina. The theme was the improvement of general health conditions in small towns or communities. How to go about securing state and federal help in securing portable water, sewage, sanitary health survey, public health service, housing or any other project pertaining to the health and welfare of local communities.

This was followed by a panel on "Safety—Home, Work, Play" composed of—

Ralph V. Platou, M. D.
Professor of Pediatrics
Tulane Medical School
New Orleans, Louisiana

Mr. G. D. Kite
Extension Agricultural Engineer Chairman
Extension Safety Committee
Virginia Agricultural Extension Service
Blacksburg, Virginia

J. H. Venable, M. D., Director
Department of Public Health
State of Georgia
Atlanta, Georgia

Mr. J. N. Busby, Ass't Director
Agricultural Extension Service
University of Florida
Gainesville, Florida

Martin P. Hines, D.V.M.
American Veterinary Medical Assn.
Raleigh, North Carolina

Col. Wm. P. Trotter, Director
Georgia Department of Public Safety
Atlanta, Georgia

Dr. H. A Mathews, President, Carolina Rural Safety Council, Canton, North Carolina acted as chairman to the above panel and the Reactor Panel which was composed of—

Seth H. Hurdle, M. D., M.P.H.
Deputy State Health Officer
Salisbury, Maryland

Mr. Earl B. Garrett
North Carolina State Grange
Raleigh, North Carolina

Miss Oris Cantrell
Associate Editor
Home Department
The Progressive Farmer
Birmingham, Alabama

Mr. E. H. Agnew, President
South Carolina Farm Bureau
Columbia, South Carolina

Mrs. John M. Chenault
Rural Health Chairman
Woman's Auxiliary to
American Medical Association
Decatur, Alabama

This panel asked the leading questions, then the whole conference was permitted to ask questions of the panel all pertaining to the theme of the panel.

That evening at a banquet Dr. Julian P. Price spoke on a look at the national scene. In this talk he covered the work of the day from a national level. The order of the day was stopped for the television Nixon-Kennedy debate.

On Saturday morning October 8th the meeting was presided over by Dr. Francis T. Holland who introduced the discussion leader for the morning, Milton D. Kruegar, Execueive Secretary of the Medical Association of Georgia.

The first speaker introduced was Dr. H. Phillip Hampton on "What's Involved in the Cost of Medical Care" in which he explained the part played by Physicians, Surgeons, Hospitals, Drugs, Laboratories, Dentists, and Nurses. He discussed the costs of each against their relative value. In this discussion he explained the dangers of socialized medicine in which he gave the history of medicine beginning with early civilization and the gradual encroachment of the government into medical services rendered. In defending the high cost of hospitalization today he showed where two-thirds the cost of running a hospital is in wages. He compared the long hospitalization of twenty years ago to the short periods of today, making the per diem cost high but the over all cost about the same.

Mr. S. G. Chandler next spoke on "Health Opportunities Through Organized Community Development Groups" told us of the transition period the rural south is now going through from agricultural to industrial and that there has been an eighty percent increase in manufacturing here in the south.

Mr. Morris McGough introduced three high school students.

The first to be introduced was Miss Carolyn Ware who was the National 4-H Club safety winner for 1959. In her talk she stressed general safety of home and general public such as air rifle and teenage auto safety.

The next to be introduced was Miss Mary

Lou Maness who spoke on health. She was the 4-H Club Health winner for 1960.

The third speaker being Mr. Earl Cheek, Jr. of F.F.A. and his topic was Community Health in which he stressed farm safety especially in use of farm machinery.

Mr. S. G. Chandler next showed some slides demonstrating the use of all of your resources for Community Health.

Mr. Dorris W. Rivers was the last speaker his subject being "Conference Summary and a Look Ahead" in which he pictured the changing Rural Communities caused by mechanization, mobility, the change from rural to urbanism and industrialization.

Guy R. Jones, M. D.
Member, Rural Health Committee

INFORMATION FURNISHED BY HEALTH INSURANCE ASSOCIATION OF AMERICA

Chicago—"At least 288 voluntary health insuring organizations currently issue new individual hospital or surgical policies to persons 65 years of age or over," Ardell T. Everett, Second Vice President of the Prudential Insurance Co., Newark, N. J., said.

These organizations include insurance companies, Blue Cross - Blue Shield plans and other insuring plans, Mr. Everett said in a speech delivered at the Health Insurance Association of America's 1960 Individual Insurance Forum, held at the Drake Hotel, Chicago.

Mr. Everett also reported that:

—At least 51 insurance companies offer individual health insurance policies guaranteed renewable for lifetime, and that of these, at least 31 companies issue this lifetime protection to persons 65 or over.

—Several insurance companies offer policies through a mass enrollment approach to all senior citizens regardless of medical history.

—At least 82 insurance companies, which issue 90 per cent of the group health insurance written by the insurance business, and a number of other insuring organizations offer policies continuing coverage under group plans for retired employees.

—At least 214 insuring organizations give retirees the option to convert from their group plan to an individual policy.

In his speech about the senior citizen population, entitled "Sixteen Million—And Going Up," Mr. Everett said the resolution of the health care problem of the aged "will determine the ultimate solution of all health problems for all ages." He urged the HIAA's 267 member companies to become even more active in providing senior citizen coverage.

Stressing that his views were personal opinions and not necessarily those of his company or any organization, Mr. Everett told his audience that health care has become a "very satisfactory" political action device.

"It is emotional in nature; it is hard to define; it is difficult to oppose; it draws a wide press," he said. "We know that the welfare planners will be satisfied to start the legislation at any age, in any manner, in any amount. With them the foot-in-the-door concept is not just an adage; it is a realistic approach."

He read this portion of the HIAA's policy on health care for the aged:

> "That segment of our older population unable to finance the costs of health care for themselves because of their limited means should have assurance that health care is available to them when they need it. To that end, the health insurance business supports assistance programs to supplement the efforts of voluntary agencies . . .
>
> "The health insurance business supports a federal matching funds program which would encourage development of nursing home facilities, of suitable standards, for older persons who need medical attention of less scope than full hospital care."

Mr. Everett said he believes this policy "correctly and properly interprets the extent to which governments should be involved in the health care field and infers the proper method of financing." He then declared:

"Any approach which suggests or includes any type of compulsory program, regardless of limitations on age or extent of coverage, inevitably will lead our country farther down the road to the total welfare state."

G. P.'s HOLD SUCCESSFUL MEETING IN LAFAYETTE

The Louisiana Academy of General Practice held its annual meeting in Lafayette in mid-October. Among the guest speakers appearing on an outstanding scientific program were Dr. Floyd C. Bratt, Rochester, New York, president-elect of the American Academy of General Practice; Mr. Willard E. Bennett, labor relations superintendent, Cities Service Refining Corporation, Lake Charles; Dr. Don W. Chapman, Clinical Professor of Medicine, Baylor University College of Medicine; Dr. William M. Christopherson, Professor and Chairman of the Department of Pathology of the University of Louisville School of Medicine; Dr. I. Phillips Frohman, Washington, D. C.; Dr. Lesley M. Warshaw, chief of Radiology, St. Patrick's Hospital, Lake Charles; Dr. Rafael C. Sanchez, New Orleans, and Dr. Theodore A. Watters, Clinical Professor of Psychiatry, Louisiana State University School of Medicine. Dr. E. B. Flake of Shreveport was installed as president of the Academy, succeeding Dr. J. William Crookshank of Lake Charles.

ORLEANS PARISH ELECTS OFFICERS

Dr. John F. Oakley has been named president-elect of the Orleans Parish Medical Society for 1961. Others elected to office at the Society's October meeting were Dr. John J. Archinard, first vice-president; Dr. Louis A. Monte, second vice-president; Dr. John L. Kron, third vice-president; Dr. C. F. Bellone, secretary; Dr. Spencer B. McNair, treasurer; Dr. J. Morgan Lyons, librarian, and Dr. C. Walter Mattingly and Dr. William C. Rivenbark, additional members of the board of directors for two-year terms.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

TWENTY-FOURTH ANNUAL MEETING THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-fourth annual meeting of the New Orleans Graduate Medical Assembly will be held March 6, 7, 8 and 9, 1961, headquarters at The Roosevelt Hotel.

Nineteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-seven informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, medical motion pictures, round-table luncheons, scientific exhibits and technical exhibits.

Following the meeting in New Orleans, arrangements have been made for a clinical tour to the Orient leaving New Orleans via air on March 10, to make a connection with Jet flight leaving Los Angeles at night. The itinerary includes visits to Hawaii, the Philippines, Hong Kong and Japan, returning on March 30 to gateway city of choice—LOS ANGELES, SAN FRANCISCO, or SEATTLE. (Optional extensions may be arranged).

Details of the New Orleans meeting and the tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

DR. MILLER REPLACES DR. HAROLD CUMMINS DEPARTMENT OF ANATOMY TULANE SCHOOL OF MEDICINE

Dr. James A. Miller, Jr., has been appointed professor and chairman of the department of anatomy at Tulane school of medicine, it was announced by Dr. M. E. Lapham, acting president of Tulane university.

Dr. Miller assumes the post formerly held by Dr. Harold Cummins who reached the age of retirement a year ago. During the past year a committee of three senior members of the department of anatomy has acted as chairman. Dr. Cummins is now assistant dean in charge of admissions.

Dr. Miller has been professor of anatomy at Emory university since 1953, serving in this capacity in the division of basic sciences. Prior to that he was professor and chairman of the department of anatomy in the Emory school of dentistry.

Dr. Lapham said that Dr. Miller is a devoted teacher of students and has earned an international reputation for his research work. His

principal interests have centered in asphyxia, or shortage of oxygen, in newborn babies and the damage which results.

In 1957 he won a senior postdoctoral fellowship and worked for a year in England and Sweden. During this time he had opportunity to work with doctors in the successful application of his ideas for the treatment of asphyxia in newborns.

In much of his work he collaborated with his wife who also holds a Ph.D. degree. He is author of 60 articles in scholarly and scientific journals.

Dr. Miller was born in China of missionary parents and attended the College of Wooster in Ohio, where he graduated in 1928. He holds the Ph.D. degree in zoology from the University of Chicago. He subsequently served on the faculties of Ohio University, the University of Michigan and the University of Tennessee. He has been at Emory since 1946.

Dr. and Mrs. Miller were awarded the Research prize for 1959 of the Association of Southeastern Biologists for their joint paper on factors contributing to the successful reanimation of mice cooled to less than one degree Centigrade.

In December of 1959, Dr. and Mrs. Miller received the Annual Research Citation of the Emory Chapter of Sigma Xi in recognition of outstanding research on asphyxia of the newborn.

USE OF FEMALE HORMONE FEASIBLE FOR MEN

The long-term therapeutic use of female hormones in men has been found to be "entirely feasible," according to a report in the Sept. 17 Journal of the American Medical Association.

The effects of female hormones (estrogens) prescribed for men recovering from heart attacks were reported by Drs. Jessie Marmorston, Oscar Magdison, Oliver Kuzma and Frederick J. Moore, Los Angeles.

All of the patients had suffered heart attacks (myocardial infarctions) as a result of hardening of the coronary arteries that surround the heart. A high content of fats in the blood is believed to be involved in the development of hardening of the arteries. Estrogens were administered to patients to reduce their elevated blood fat levels.

The authors said the ability of estrogens to reduce fats in the blood is "well established" but their use has been limited in men because they can cause feminization.

However, they said, "our findings indicate clearly that the long-term investigative administration of small to moderate doses of estrogen to men with myocardial infarction is entirely feasible."

The findings were based on a study of 109 men, ranging from 35 to 83 years of age, who were treated with estrogens for a total of more than 900 months.

Each patient was started on a small dose which was increased little by little over a considerable period of time.

"With this gradual approach to tolerance, clinical side-effects have been observed in most patients at some time in the course of therapy but have presented no obstacle to continuation of therapy," the physicians said.

The first manifestation in almost every case was pain or tenderness of the breast, they said. Of 44 patients available for observation for some months after this symptom appeared, they said, 15 tolerated the same dosage thereafter and 17 tolerated an even greater dosage whereas in only 12 was it necessary to reduce the dosage.

INTERIM SESSION AMERICAN COLLEGE OF CHEST PHYSICIANS

Washington, D. C., November 26-28, 1960

The American College of Chest Physicians will hold its Annual Interim Session at the Shoreham Hotel in Washington, D. C. The scientific sessions will be held on Saturday and Sunday, November 26 and 27. Monday, November 28, will be reserved for administrative sessions. Dr. M. Jay Flipse, Miami, Florida, President of the College, will preside.

Dr. Joseph W. Peabody, Jr., Washington, D. C., and his committee, have arranged a scientific program of exceptional interest including Symposia on Congenital Bronchopulmonary Disorders, The Role of Steroid Therapy in Chest Diseases, and Current Therapeutic Issues.

A highlight of the program will be the Fireside Conferences on Sunday evening, November 27. In addition, there will be three round table luncheon discussions on both Saturday and on Sunday. These will feature prominent speakers discussing various aspects of heart and lung diseases.

AMERICAN RHEUMATISM ASSOCIATION MEETING IN DALLAS

The Seventh Interim Scientific Session of the American Rheumatism Association will be held all day Friday and Saturday morning, December 9 and 10, 1960, at the Sheraton Dallas Hotel in Dallas, Texas.

During the Saturday morning session, the ARA members will be joined by the members of the Texas Academy of Internal Medicine and by the members of the Texas Rheumatism Association. There is no registration fee. Printed programs will be available at the meeting or two weeks before the meeting by writing to the Executive Secretary, American Rheumatism Association, 10 Columbus Circle, New York 19, N. Y.

Current plans provide for a panel discussion on "Lupus Nephritis", with participation by a nationally known pathologist, electronmicroscopist and several clinicians. The panelists will discuss the clinical and pathological picture of this lesion and its course on steroid therapy.

Chairman of the Program Committee is Dr. Morris Ziff, Southwestern Medical School University of Texas; Chairman of the Local Arrangements Committee is Dr. Howard C. Coggeshall, both of Dallas.

EXTRA CHROMOSOME FOUND IN MENTAL RETARDATION CASE

Forty-seven chromosomes, one more than normal, have been found in a mentally-retarded 21-year-old woman with minor congenital abnormalities, researchers at the Roswell Park Memorial Institute, Buffalo, N. Y., reported.

The report in the Sept. 17 Journal of the American Medical Association was the first description of the finding of an extra chromosome among the six largest chromosomes.

The authors are Avery A. Sandberg, M. D., Lois H. Crosswhite, B.A., and Edwin Gordy, M. D.

Each normal human being has 46 chromosomes, 22 pairs of autosomes and two sex chromosomes (XX in the female, XY in the male). Half of the chromosomes come from the mother and half from the father at the time of conception. Chromosomes, located in the nucleus of the cell, contain genes which determine hereditary traits.

There have been previous reports of an extra chromosome among the smallest chromosomes in persons with mongolism, a specific type of mental retardation, and of an extra chromosome of medium size in children with congenital defects.

DR. NICE APPOINTED CHAIRMAN DEPARTMENT OF RADIOLOGY TULANE SCHOOL OF MEDICINE

Dr. Charles M. Nice, Jr., professor of radiology at Tulane school of medicine has been appointed to chairman of the newly created department of radiology. Radiology has been a division within the department of medicine and Dr. Nice has headed the division for the past two years. The creation of the new department was recommended by a committee headed by Dr. George E. Burch, professor and chairman of the department of medicine and was prompted by the importance of radiology in the medical curriculum as well as the competent work done by Dr. Nice. A new full-time assistant professor, Dr. Joseph L. Izenstark, has been added to the radiology faculty. The departmental status of radiology will aid further recruitment to the full time faculty and permit expansion of the teaching and research work.

Dr. Nice is a native of Parsons, Kansas. He received his degree in medicine in 1943 from the University of Kansas, his master of science degree in 1948 from the University of Colorado, and his doctorate in 1951 at the University of Minnesota. He joined the Tulane faculty in 1958.

KIDNEY SUBSTANCE LINKED TO HIGH BLOOD PRESSURE

New evidence has been found implicating the kidneys in the development of high blood pressure.

A recent study shows that a substance released by the kidneys, angiotensin, produced significant increases in the secretion of aldosterone, a hormone found in excess in cases of malignant hypertension.

Angiotensin is liberated as a result of altered blood circulation or a deficiency of blood in the kidney. Aldosterone is produced by the adrenal glands, which lie adjacent to the kidneys. The hormone accelerates kidney retention of sodium chloride, or salt, and elimination of potassium.

The studies were reported by Dr. John H. Laragh, department of medicine, Columbia University College of Physicians and Surgeons, New York City, in two articles in the Sept. 17 Journal of the American Medical Association.

Angiotensin, like norepinephrine and epinephrine also produced by the adrenal glands, tends to increase blood pressure. Dr. Laragh compared the effects of angiotensin with the other two substances.

Unlike norepinephrine and epinephrine, which had varying effects, he said, "infusion of angiotensin in seven subjects produced an increase in the aldosterone secretory rate in every experiment."

Angiotensin is released by an enzyme, termed renin, found in the blood-deficient kidney, Dr. Laragh explained. Aldosterone, by causing sodium retention, might tend to improve the kidney circulation leading in turn to suppression of the enzyme, he said.

"More work must be done, but it now seems that the approach to malignant hypertension should be aimed at measures to define and to correct abnormalities in the renal [kidney] circulation," he said. "Included in the therapeutic approach may be the feeding of added sodium chloride in an attempt to improve the renal circulation, rather than its deprivation, as has been popular heretofore."

Co-authors of one of Dr. Laragh's reports are Marielena Angers, M. D., William G. Kelly, Ph.D., and Seymour Lieberman, Ph.D., all of New York City.

BOOK REVIEWS

Metabolic Care of the Surgical Patient; by Francis D. Moore, Philadelphia, Pennsylvania, 1959, pp. 1011. Price $20.00.

This book is the most comprehensive work written on the field of metabolic aspects of surgical disease. The author has organized a vast amount of material in a concise fashion and has made a complex field both comprehensible and interesting. The literary style is pleasant and polished, and the graphic illustrations, which appear cumbersome at first glance, are probably as simple as possible in this particular field.

This book is the definitive work in the rather new field of surgical metabolism. It should be in the library of every surgeon.

KEITH REEMTSMA, M. D.

The Surgical Treatment of Scoliosis; by Dr. Louis A. Goldstein, Charles C Thomas, Springfield, Illinois, 1959, pp. 116, $6.75.

This book fulfills a need for those who deal with the complicated problem of scoliosis. It is the result of community cooperation among orthopedic surgeons in the vicinity of Rochester, New York, because only by such an effort could sufficient cases be corralled for studies such as Dr. Goldstein has made.

The present and past thinking on both the conservative and surgical treatment of scoliosis is presented. Techniques are well described, such as that of application of the turnbuckle cast and the actual carrying out of spinal fusion. The results of treatment are critically analyzed to let the orthopedic surgeon know what to expect in various types of curvatures. This monograph should be of much help to the orthopedic surgeon.

LYON K. LOOMIS, M. D.

Cardiac Auscultation; by J. Scott Butterworth, et al, 2d ed., New York, N. Y., Grune & Stratton, 1960, pp. 102, $6.25.

This book is an outgrowth of material used in postgraduate teaching of clinical auscultation of the heart. Because it is not intended as a comprehensive work, there are only brief discussions of physical principles involved in perception of heart sounds, in addition to the brief descriptions of auscultation of heart sounds and murmurs in normal and diseased states. Illustrations have been improved since the first edition by including ECG's or carotid pulse curves with stethograms.

The authors point out the usefulness of improved audio-visual techniques in learning auscultation. The reviewer, however, has the impression that the newer techniques have contributed principally by stimulating an interest in teaching the art. The equipment which is advertised may aid teaching by the simultaneous reception of visual patterns and appreciation of time relationships, but the method is a very poor substitute for bedside stethoscopic study and correlation with pathologic and surgical observations. The recording of sounds can be useful, as the authors indicate, to accumulate a number of observations for review in a short teaching period.

For the sake of brevity, clinical descriptions of associated cardiac findings are omitted. Unfortunately, auscultation loses its significance when divorced from clinical observations and interpretations. By being brief, the book fails to completely describe a number of interesting observations which can be made by auscultation. Such observations as the variations of auscultatory findings with combined congenital defects, changes of murmurs or sounds with phases of disease, and the mid-diastolic murmur with a dilated heart are inadequately considered. Beyond an outline for a course in auscultation of the heart, the lack of detail makes the book have a rather limited use.

GERALD S. BERENSON, M. D.

The Teen-Age Years; By Arthur Roth, Garden City, New York, Doubleday & Company, Inc., 1960, $3.95, pp. 288.

This book deals with the many problems of the teen-age group. The material has been written in simple language that enables any parent or layman to read it without any difficulty and enjoy its content. It gives the reader a correct attitude in the approach to the teen-age group and helps them to understand the different changes that take place just at that age.

The book is not only good for parents of teenagers but also for the general practitioner and other physicians who will have to take care of teen-agers.

GABRIELA ORTEGA DE RUTTER, M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., N. Y.: Sight. A Handbook for Laymen, by Roy O. Scholz, M. D.

Grune & Stratton, N. Y.: The Out-patient Treatment of Schizophrenia; A Symposium, edited by Sam C. Scher, and Howard R. Davis.

Landsberger Medical Books, Inc., N. Y.: The Role of the Physician in Environmental Pediatrics, by Carl C. Fischer, M. D.

J. B. Lippincott Co., Phila.: What Price Medical Care? A Preventive Prescription for Private Medicine, by Doctor the Rt. Hon. Sir Earle Page, with an introduction by E. A. van Steenwyk.

W. B. Saunders Co., Phila.: Outline of Pathology, by John H. Manhold, Jr., D.M.D., and Theodore E. Bolden, D.D.S.; Occupational Diseases and Industrial Medicine, by Rutherford T. Johnstone, M. D., and Seward E. Miller, M. D.

Taplinger Publishing Co., Inc., N. Y.: Adventure to Motherhood, by J. Allan Offen, M. D.

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Friedman, A. P., and Merritt, H. H.: J.A.M.A. *163*:1111 (Mar. 30) 1957.

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Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets.
Also as MEPROTABS®* — 400 mg. *unmarked*, coated tablets; and as MEPROSPAN®— 400 mg. and 200 mg. *continuous release* capsules.

WALLACE LABORATORIES / *Cranbury, N. J.*

*TRADE MARK

of clinical use...



...for the tense and nervous patient

Despite the introduction in recent years of "new and different" tranquilizers, Miltown continues, quietly and steadfastly, to gain in acceptance. Meprobamate (Miltown) is prescribed by the medical profession more than any other tranquilizer in the world.

The reasons are not hard to find. Miltown is a ***known*** drug. Its few side effects have been fully reported. ***There are no surprises in store for either the patient or the physician.***

NEW analgesic

Kills pain



stops tension

For neuralgias, dysmenorrhea, upper respiratory distress, postsurgical conditions... new compound kills pain, stops tension, reduces fever—gives more complete relief than other analgesics.

Soma Compound is an entirely new, totally different analgesic combination that contains three drugs. First, Soma: a new type of analgesic that has proved to be highly effective in relieving both pain and tension.* Second, phenacetin: a "standard" analgesic and antipyretic. Third, caffeine: a safe, mild stimulant for elevation of mood. As a result, the patient gets more complete relief than he does with other analgesics.

Soma Compound is nonnarcotic and nonaddicting. It reduces pain perception without impairing the natural defense reflexes.*

NEW NONNARCOTIC ANALGESIC

soma® Compound

Composition: Soma (carisoprodol), 200 mg.; phenacetin, 160 mg.; caffeine, 32 mg.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 apricot-colored, scored tablets.

NEW FOR MORE SEVERE PAIN

soma® Compound + codeine

BOOSTS THE EFFECTIVENESS OF CODEINE: Soma Compound boosts the effectiveness of codeine. Therefore, only ¼ grain of codeine phosphate is supplied to relieve the more severe pain that usually requires ½ grain.

Composition: Same as Soma Compound plus ¼ grain codeine phosphate.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 white, lozenge-shaped tablets; subject to Federal Narcotics Regulations.

References available on request.

WALLACE LABORATORIES • Cranbury, N. J.

in arthritis and allied disorders

Butazolidin®
brand of phenylbutazone
Geigy

Proved by a Decade of Experience
Confirmed by 1700 Published Reports
Attested by World-Wide Usage

Since its anti-inflammatory properties were first noted in Geigy laboratories 10 years ago, time and experience have steadily fortified the position of Butazolidin as a leading nonhormonal anti-arthritic agent. Indicated in both chronic and acute forms of arthritis, Butazolidin is noted for its striking effectiveness in relieving pain, increasing mobility and halting inflammatory change.

Butazolidin®, brand of phenylbutazone: Red, sugar-coated tablets of 100 mg. Butazolidin® Alka: Orange and white capsules containing Butazolidin 100 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

Geigy, Ardsley, New York



162-60

In active people who won't take time to eat properly, MYADEC can help prevent deficiencies by providing comprehensive vitamin-mineral support. Just one capsule a day supplies therapeutic doses of 9 important vitamins plus significant quantities of 11 essential minerals and trace elements. MYADEC is also valuable in vitamin depletion and stress states, in convalescence, in chronic disorders, in patients on salt-restricted diets, or wherever therapeutic vitamin-mineral supplementation is indicated.

Each MYADEC Capsule contains: VITAMINS: Vitamin B_{12} crystalline—5 mcg.; Vitamin B_2 (riboflavin)—10 mg.; Vitamin B_6 (pyridoxine hydrochloride)—2 mg.; Vitamin B_1 mononitrate—10 mg.; Nicotinamide (niacinamide)—100 mg.; Vitamin C (ascorbic acid)—150 mg.; Vitamin A—(7.5 mg.) 25,000 units; Vitamin D—(25 mcg.) 1,000 units; Vitamin E (d-alpha-tocopheryl acetate concentrate)—5 I.U. MINERALS: (as inorganic salts) Iodine—0.15 mg.; Manganese—1 mg.; Cobalt—0.1 mg.; Potassium—5 mg.; Molybdenum—0.2 mg.; Iron—15 mg.; Copper—1 mg.; Zinc—1.5 mg.; Magnesium—6 mg.; Calcium—105 mg.; Phosphorus—80 mg. Bottles of 30, 100 and 250.

a quick "bite"...
then back
to the grind?
nutritional
deficiency's
not far behind.
prescribe...

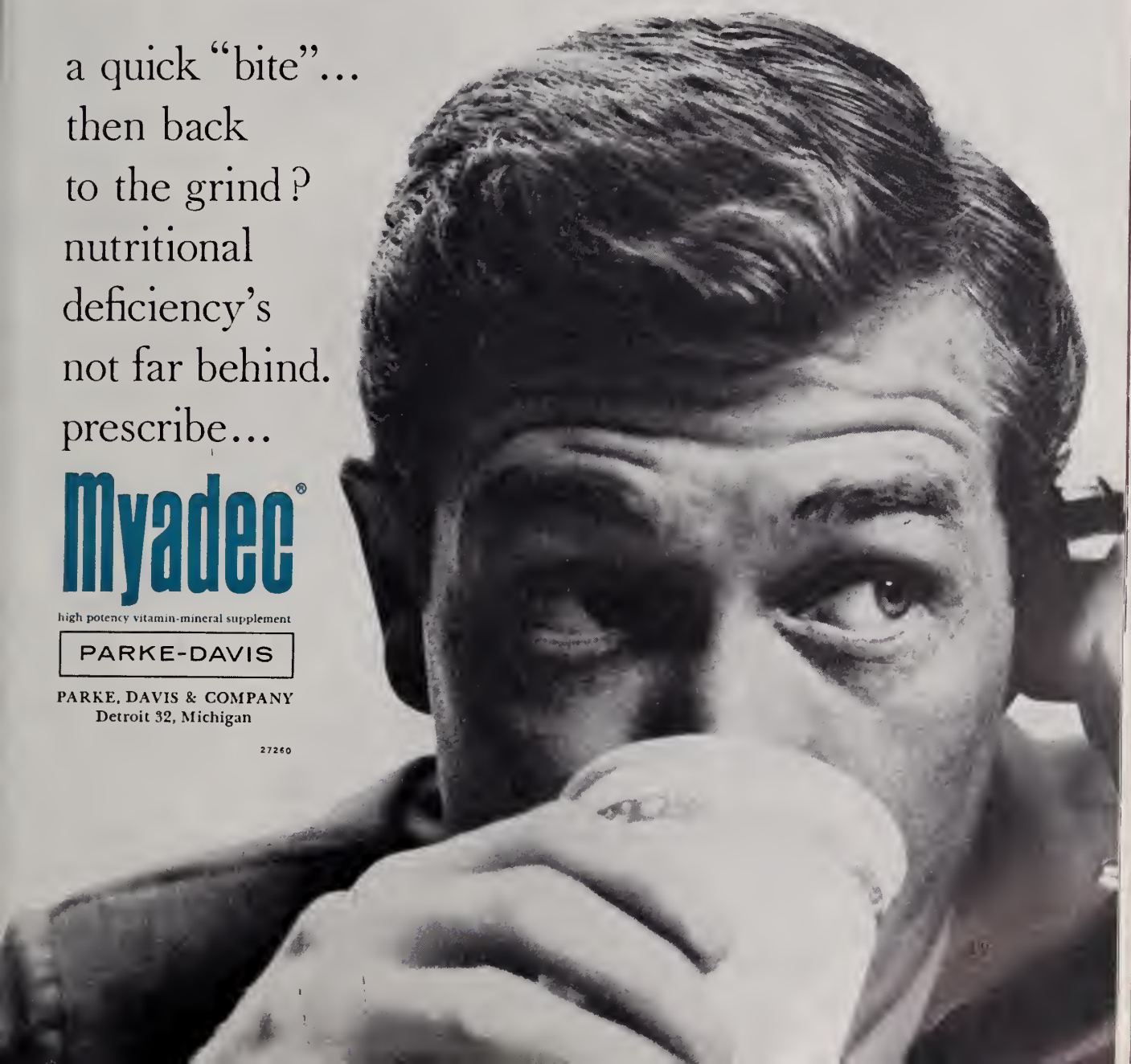
Myadec®

high potency vitamin-mineral supplement

PARKE-DAVIS

PARKE, DAVIS & COMPANY
Detroit 32, Michigan

27260



3-dimensional support for older patients



BOLSTERS... ▲ *tissue metabolism*
▲ *interest, vitality*
▲ *failing nutrition*

NEW

1 small capsule every morning

GEVRESTIN®

Geriatric Vitamins-Minerals-Hormones-d-Amphetamine Lederle

Each capsule contains: Ethinyl Estradiol 0.01 mg. • Methyl Testosterone 2.5 mg. • d-Amphetamine Sulfate 2.5 mg. • Vitamin A (Acetate) 5,000 U.S.P. Units • Vitamin D 500 U.S.P. Units • Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate 1/15 U.S.P. Unit (Oral) • Thiamine Mononitrate (B_1) 5 mg. • Riboflavin (B_2) 5 mg. • Niacinamide 15 mg. • Pyridoxine HCl (B_6) 0.5 mg. • Calcium Pantothenate 5 mg. • Choline Bitartrate 25 mg. • Inositol 25 mg. • Ascorbic Acid (C) as Calcium Ascorbate 50 mg. • l-Lysine Monohydrochloride 25 mg. • Vitamin E (Tocopherol Acid Succinate) 10 Int. Units • Rutin 12.5 mg. • Ferrous Fumarate (Elemental iron, 10 mg.) 30.4 mg. • Iodine (as KI) 0.1 mg. • Calcium (as $CaHPO_4$) 35 mg. • Phosphorus (as $CaHPO_4$) 27 mg. • Fluorine (as CaF_2) 0.1 mg. • Copper (as CuO) 1 mg. • Potassium (as K_2SO_4) 5 mg. • Manganese (as MnO_2) 1 mg. • Zinc (as ZnO) 0.5 mg. • Magnesium (MgO) 1 mg. • Boron (as $Na_2B_4O_7.10H_2O$) 0.1 mg. Bottles of 100, 1000.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Lederle

Prompt, Dependable Service on Diagnostic Reagents manufactured by Warner-Chilcott who for over a century have been serving the Medical Profession with Diagnostic Agents and Pharmaceuticals developed through the finest research.

In stock for immediate shipment to you: Simplastin — Diagnostic Plasma — Phosophatabs — Transaminase — Versatol — Fibrinogen — Thromboplastin — Ketodase — and the new UROGRAPH.

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SURGICAL COMPANY INC

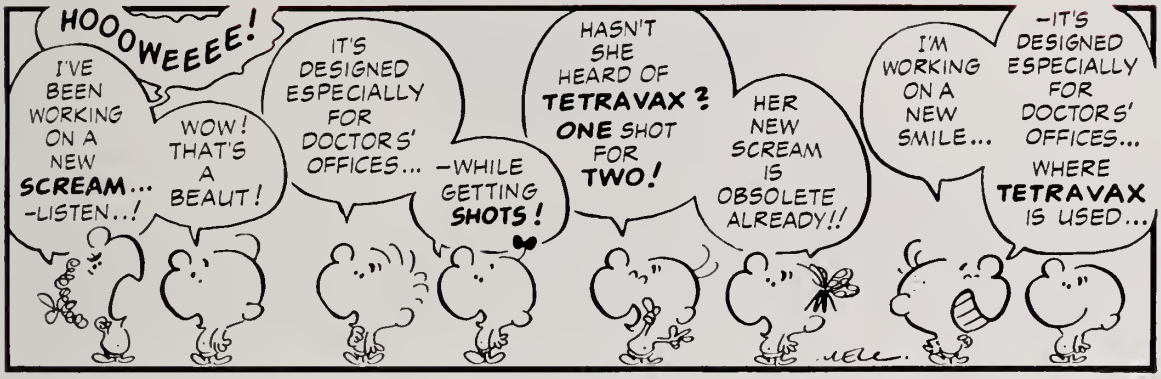
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SHREVEPORT, LOUISIANA



FOR SIMULTANEOUS IMMUNIZATION AGAINST 4 DISEASES:

Poliomyelitis-Diphtheria-Pertussis-Tetanus

PEDI-ANTICS



TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more *diseases...with* fewer *injections*

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.



For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

TETRAVAX IS A TRADEMARK OF MERCK & CO., INC.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

AN AMES CLINIQUICK®
CLINICAL BRIEFS FOR MODERN PRACTICE

WHAT LABORATORY PROCEDURES ARE INDICATED IN DIABETICS WITH URINARY TRACT INFECTIONS?

A urine culture is absolutely essential in the diabetic suspected of having a urinary tract infection since such infection is not always accompanied by pyuria. It is also essential to keep the urine free from sugar—as shown by frequent urine-sugar tests—for successful therapy.

Source: Harrison, T. R., *et al.:* Principles of Internal Medicine, ed. 3, New York, McGraw-Hill Book Co., 1958, p. 620.

the most effective method of routine testing for glycosuria...
color-calibrated

CLINITEST®
BRAND *Reagent Tablets*

the *standardized* urine-sugar test for reliable quantitative estimations

Urinary tract infections are about four times more frequent in the diabetic than in the non-diabetic. The prevention and treatment of urinary tract infections, as well as the avoidance of other complications of diabetes, are significantly more effective in the well-controlled diabetic. The patient should be impressed repeatedly with the importance of continued daily urine-sugar testing—especially during intercurrent illness—and warned of the consequences of relaxed vigilance.

"urine-sugar profile" With the new *Graphic Analysis Record* included in the CLINITEST Urine-Sugar Analysis Set (and in the tablet refills), daily urine-sugar readings may be recorded to form a graphic portrayal of glucose excretion most useful in clinical control.

- *motivates patient cooperation* through everyday use of Analysis Record
- *reveals at a glance day-to-day trends* and degree of control
- *provides a standardized color scale* with a complete range in the familiar blue-to-orange spectrum

84460

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

guard against ketoacidosis
...test for ketonuria
for patient and physician use

ADDED SAFETY FOR DIABETIC CHILDREN
ACETEST® *Reagent Tablets*
KETOSTIX® *Reagent Strips*

Blood pressure that goes up with stress often comes down with SERPASIL®

(reserpine CIBA)

One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

In mild to moderate hypertension, Serpasil is basic therapy, effective alone "... in about 70 per cent of cases..."*

In severe hypertension, Serpasil is valuable as a primer. By adjusting the patient to the physiologic setting of lower pressure, it smooths the way for more potent antihypertensives.

In all grades of hypertension, Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2830MB

Complete information available on request.





A variety of diet dishes to choose from. Ham 'n' egg rolls, eggplant casserole, garden beans, oyster stew, gelatin and—beer!

The secret of a successful low-purine diet is acceptance

The acceptance of any diet depends on its appetite appeal. And this low-purine diet is unusually appetizing! Ham rolls stuffed with scrambled eggs or chilled egg salad make a delicious entree, as does a casserole of eggplant and tomato layered alternately with cottage cheese.

A dash of lemon juice flavors fresh vegetables like string beans and beets. Fresh skim milk mixed with dry skim milk powder add a "creamy" taste to oyster stew. Tuna-burgers go nicely with noodles. Fruits and gelatins make excellent, easy desserts, while corn and rice flakes brighten breakfasts.



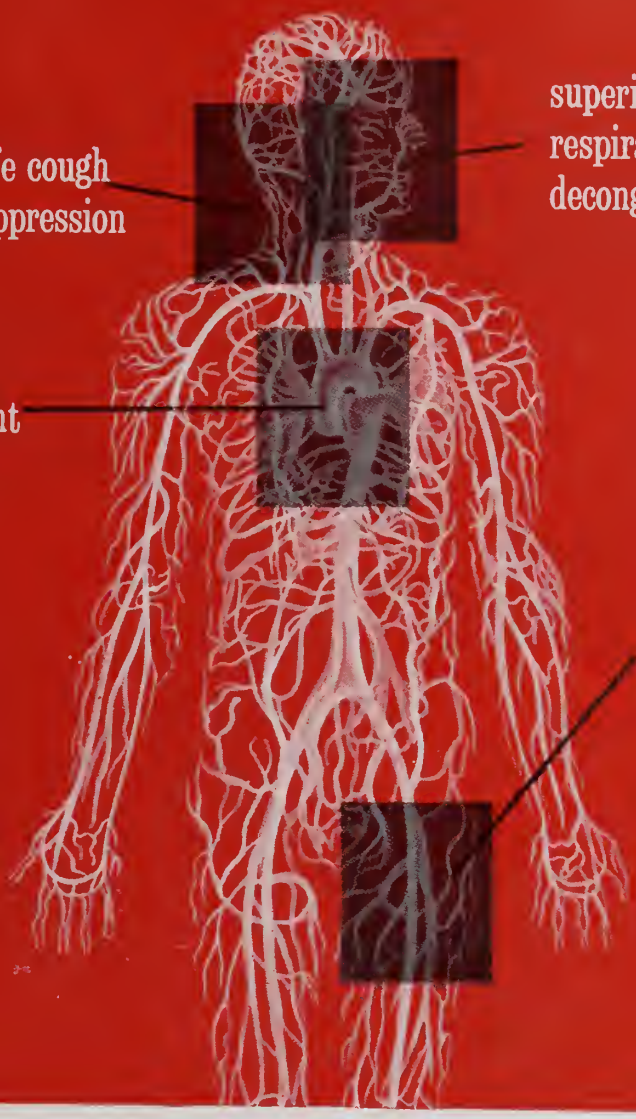
With your approval, a glass of beer can add zest to your patient's diet.

104 calories,
17 mg. Sodium/8 oz. glass
(Average of American Beers)

United States Brewers Foundation

If you'd like reprints of this and 11 other different diet menus for your patients, write United States Brewers Foundation, 535 Fifth Avenue, N.Y. 17, N.Y.

for relief from the total cold syndrome...



Tussagesic*

timed-release tablets/suspension

Each Tussagesic timed-release Tablet provides:

TRIAMINIC®	50 mg.
DORMETHAN (brand of dextromethorphan HBr)	30 mg.
TERPIN HYDRATE	180 mg.
APAP (acetaminophen)	325 mg.

Dosage: *Adults and children over 12* – one tablet in the morning, midafternoon and at bedtime. Each tablet should be swallowed whole to preserve the timed-release action.

Each tsp. (5 ml.) of Tussagesic Suspension provides:

TRIAMINIC®	25 mg.
DORMETHAN (brand of dextromethorphan HBr)	15 mg.
TERPIN HYDRATE	90 mg.
APAP (acetaminophen)	120 mg.

Tussagesic Suspension is especially suited for children and for adults who prefer liquid medication; it is pleasantly flavored, non-narcotic and non-alcoholic.

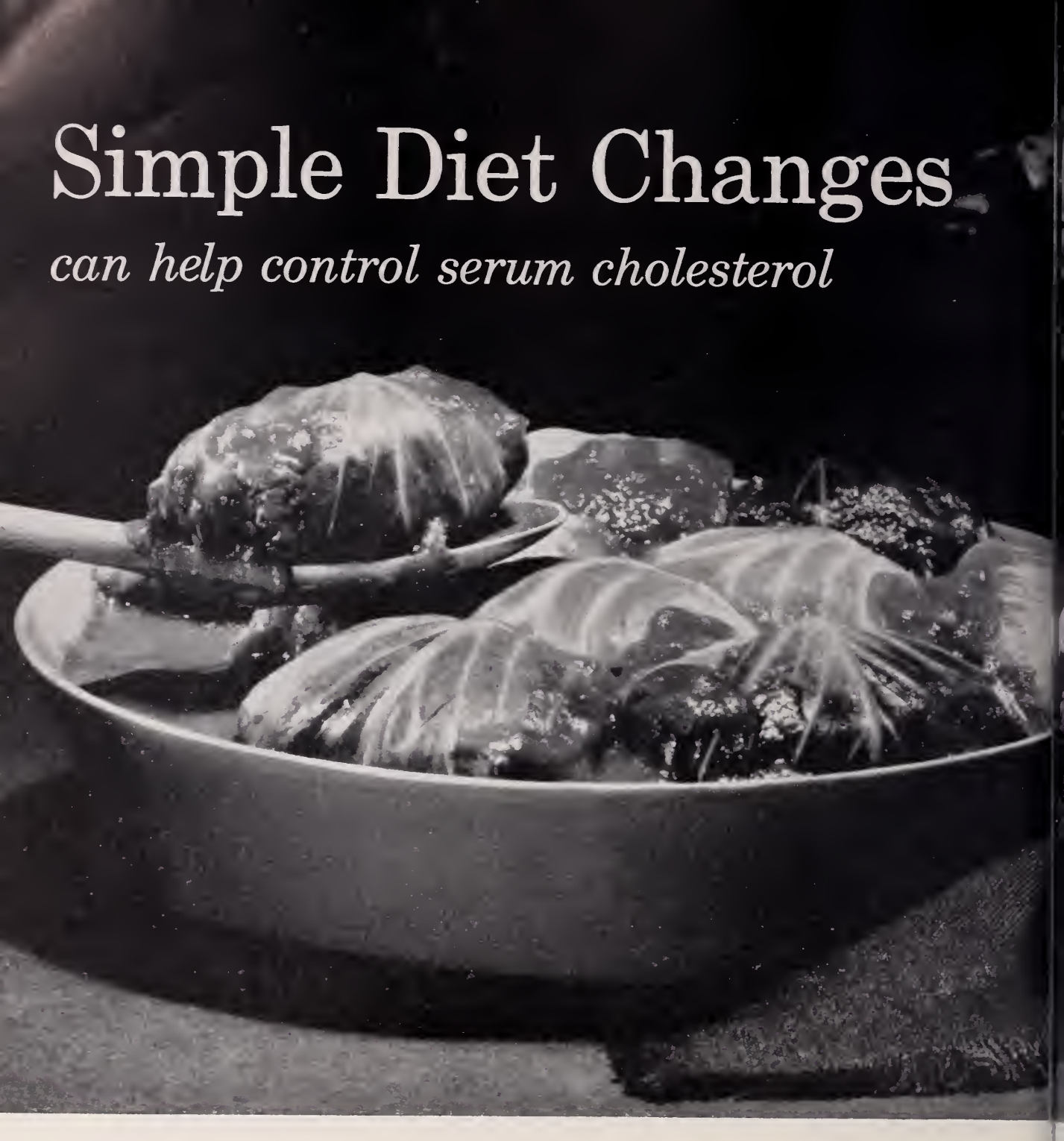
Dosage (to be taken every 3 or 4 hours): *Adults and children over 12* – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.; *Children 1 to 6* – ½ tsp.; *Children under 1* – ¼ tsp.

* TRADEMARK

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

Simple Diet Changes

can help control serum cholesterol



Fortunately for the patient's morale — often all that is necessary when you want to prescribe a regimen to reduce serum cholesterol is to . . .

1. control the amount of calories and the type of dietary fat . . . and
2. make a simple modification in the method of food preparation, using poly-unsaturated vegetable oil in place of saturated fats

Obviously, in any special diet, the fewer required changes in the patient's eating habits, the more likelihood there is that the patient will adhere to the prescribed diet.

After adjusting total fat and calorie intake, the simple replacement of *saturated* fats (those used at the table and in cooking) with *poly*-unsaturated Wesson makes possible a most subtle dietary change, yet conforms completely to therapeutic requirements.

Uniformity you can depend on. Wesson has a poly-unsaturated content better than 50%. Only the lightest cottonseed oils of high iodine number are selected for Wesson and no significant variations in standards are permitted in the 22 exacting specifications required before bottling.

Wesson satisfies the most exacting appetites. To be effective, a diet must be *eaten* by the patient.



he majority of housewives prefer Wesson particu-
rly by the criteria of odor, flavor (blandness) and
ghtness of color. (Substantiated by sales leadership
or 59 years and reconfirmed by recent tests against
he next leading brand with brand identification
emoved, among a national probability sample.)

Poly-unsaturated Wesson is unsurpassed by any readily available brand, where a vegetable (salad) oil is medically recommended for a cholesterol depressant regimen.

WESSON'S IMPORTANT CONSTITUENTS

Wesson is 100% cottonseed oil . . . winterized and of selected quality	
Linoleic acid glycerides (poly-unsaturated)	50-55%
Oleic acid glycerides (mono-unsaturated)	16-20%
Total unsaturated	70-75%
Palmitic, stearic and myristic glycerides (saturated)	25-30%
Phytosterol (Predominantly beta sitosterol)	0.3-0.5%
Total tocopherols	0.09-0.12%
Never hydrogenated—completely salt free	

Free Wesson recipes for delicious main dishes, desserts and salad dressings are available for your patients. Request quantity needed from The Wesson People, Dept. N, 210 Baronne St., New Orleans 12, La.

RELIEVE ALL COMMON COLD SYMPTOMS AT ONCE



WITH

'EMPRAZIL'®

THE TOTAL COLD-THERAPY TABLET

nasal decongestant • analgesic antipyretic • antihistamine

The ingredients combined in each 'Emprazil' tablet provide multiple drug action for prompt symptomatic relief of aches, pains, fever and respiratory congestion—due to common colds, flu or grippe—without gastric irritation.

Dosage: Adults and older children—One or two tablets t.i.d. as required. Children 6 to 12 years of age—One tablet t.i.d. as required.

Supplied: Bottles of 100 or 1000

Each orange and yellow layered tablet contains:

'Sudafed'® brand Pseudoephedrine Hydrochloride	20 mg.
'Perazil'® brand Chlorcyclizine Hydrochloride	15 mg.
Acetophenetidin	150 mg.
Aspirin (Acetylsalicylic Acid)	200 mg.
Caffeine	30 mg.

Complete literature available on request.

BURROUGHS WELLCOME & CO.
(U.S.A.) INC., Tuckahoe, N. Y.



in infectious disease[17,22,30,36]
in arthritis[18,19,20,29]
in hepatic disease[2,3,4,5,38]
in malabsorption syndrome[1,2,6,27]
in degenerative disease[6,7,19,20,40]
in cardiac disease[23,28,29,38,41]
in dermatitis[24,39]
in peptic ulcer[8,21,38]
in neuroses & psychiatric disorders[25,28]
in diabetes mellitus[31,32,33,38]
in alcoholism[9,11,35,37,38]
in ulcerative colitis[10,14,16]
in osteoporosis[13,19,20]
in pancreatitis[19]
in female climacteric[12,34]

Patients with chronic disease deserve the nutritional support provided by

Theragran-M

Squibb Vitamin-Minerals for Therapy

11 vitamins, 8 minerals
clinically-formulated and potency protected to provide

enough nutritional support to do some good

with vitamins only

Theragran

also available:

Theragran Liquid
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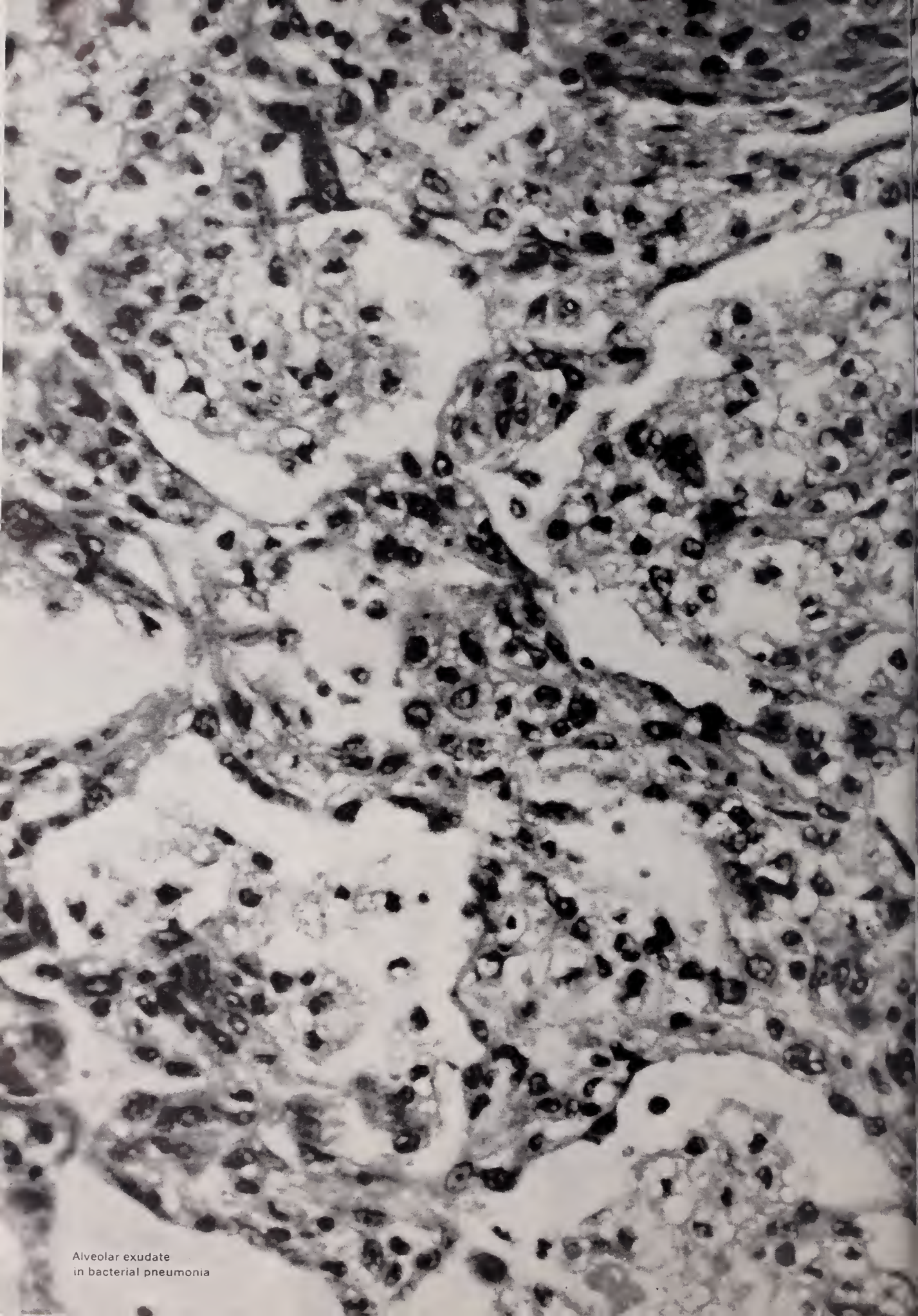
Theragran products do not contain folic acid.

1-41 a list of the above references will be supplied on request.

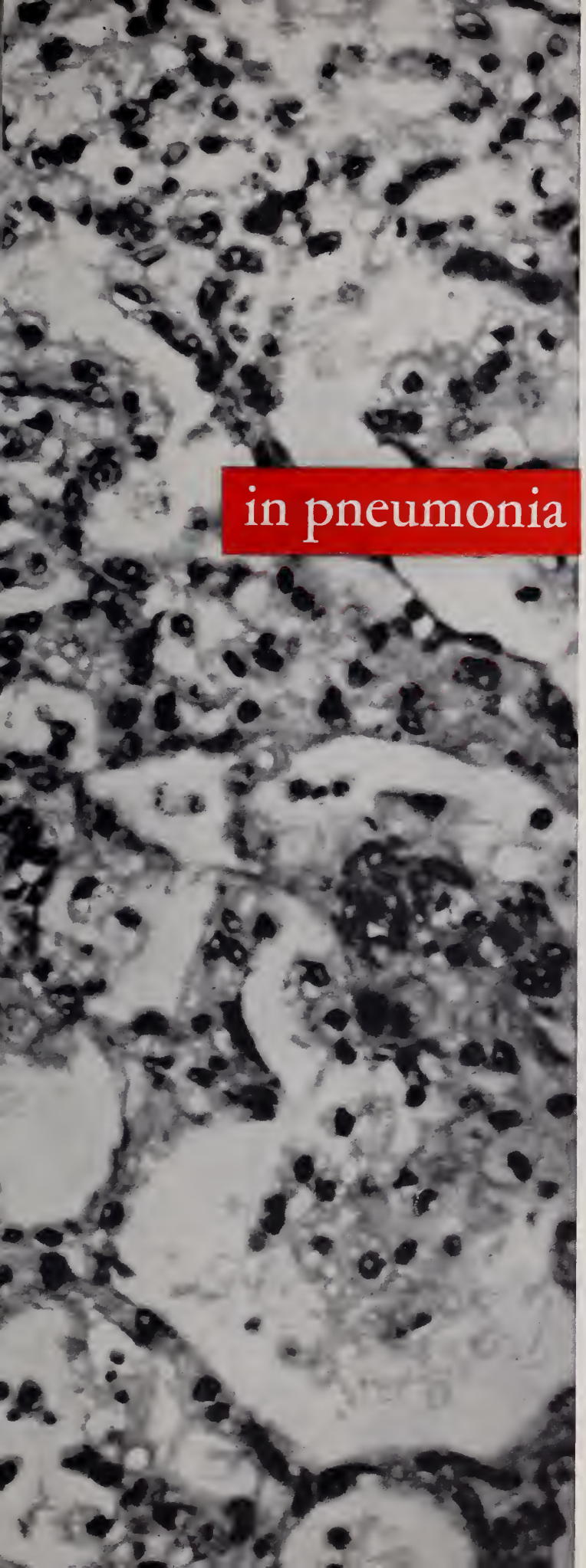
SQUIBB

"THERAGRAN"® IS A SQUIBB TRADEMARK

Squibb Quality—the Priceless Ingredient



Alveolar exudate
in bacterial pneumonia



in pneumonia

Therapeutic confidence

Panalba is effective against more than 30 commonly encountered pathogens including staphylococci resistant to other antibiotics. Right from the start, prescribing it gives you a high degree of assurance of obtaining the desired anti-infective action in this as in a wide variety of bacterial diseases.

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

*Trademark. Reg. U. S. Pat. Off.

The Upjohn Company
Kalamazoo, Michigan

Upjohn

Panalba*

your broad-spectrum antibiotic of *first* resort

benzthiazide

NaClex®

a new molecule with an unsurpassed faculty for salt excretion

A. H. Robins announces NaClex, a potent, oral, nonmercurial diuretic. NaClex is a new molecule, designated benzthiazide. Its unique chemical structure produces a "pronounced increase in diuretic potency"[1] over many older diuretics. NaClex also has antihypertensive properties, and it enhances the activity of other antihypertensive drugs.



in diuresis

salt removal is still the fundamental objective

As salt goes, so goes edema

A fundamental prineiple of diuresis is that "increased urine volume and loss of body weight are proportional to and the osmotic eonsequences of loss of ions."[2] New NaClex helps reduee edema through the application of this basic principle.

Apparently functioning in the proximal renal tubules, NaClex strictly limits the reabsorption of sodium and chloride ions. To maintain the essential, subtle balance between salt and water, the body's homeostatie mechanism reponds to this loss of ions by allowing an increased excretion of excessive extraeellular water. Thus the NaClex-indueed removal of salt leads directly to the reduction of edema.

How potent is benzthiazide?
Compared tablet for tablet with oral diuretics now available, NaClex is unsurpassed in potency. Milligram for milligram, it has aehieved optimum diuresis in pharmaeologie studies at 1/20 the dose required for chlorothiazide.

What are the major diuretic indications for NaClex?
NaClex produces diuresis, weight loss, and symptomatic improvement in edema assoeiated with conditions such as congestive heart failure, cirrhosis of the liver, chronie renal diseases (including nephrosis), premenstrual tension, toxemia of pregnancy, and obesity. Edema of local origin and that caused by steroids may also benefit.

To what extent is NaClex useful in hypertension?
NaClex has definite antihypertensive properties, and may be used alone in mild hypertension. In severer cases it may be used with other antihypertensive drugs, potentiating them and permitting their use at lower dosage. In hypertension with assoeiated water retention, NaClex is of twofold value. It may be prescribed for congestive heart failure as an ancillary measure to digitalis.

Is potassium excretion a problem with NaClex?
In short-term therapy, excessive potassium excretion is unlikely. In the effective dose range, potassium loss varies from 1/6 to 1/2 that of sodium. Naturally, the ratio of these ions depends on the rate at which excess sodium stores are depleted, and whether salt intake is restricted.

Can NaClex and mercurials be given concurrently?
Yes. When so employed, NaClex may increase the efficaey of mereurials. But NaClex alone is often effective enough to eliminate the need for parenteral mercurial administration. Also, NaClex may be effective in cases when mercurials are not.

Supply: Available in yellow, scored 50 mg. tablets.

References: 1. Ford, R. V., Cur. Therap. Res., 2:51, 1960. 2. Pitts, R. F., Am. J. Med., 24:745, 1958.

For complete dosage schedules, precautions, or other information about new NaClex, please consult basic literature, package insert, or your local Robins representative, or write to A. H. Robins Co., Inc., Richmond, Va.

A. H. ROBINS COMPANY, INC.
RICHMOND 20, VIRGINIA



A biochemical compound used to diminish intestinal gas in healthy persons and those patients having digestive disorders ■

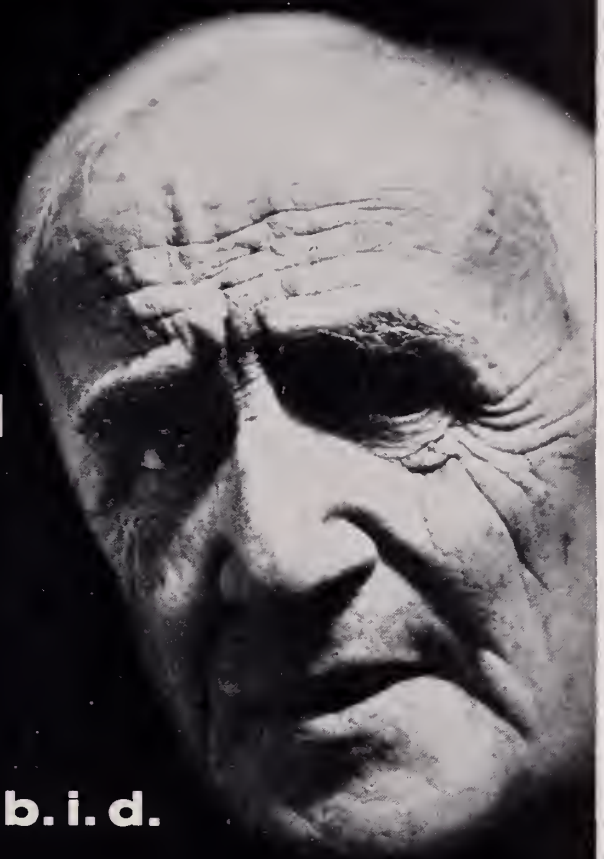
KANULASE

Each Kanulase tablet contains Dorase*, 320 units, combined with pepsin, N.F., 150 mg.; glutamic acid HCl, 200 mg.; pancreatin, N.F., 500 mg.; oxbile extract, 100 mg. Dosage: 1 or 2 tablets at mealtime. Supplied: Bottles of 50 tablets.

*DORSEY BRAND OF CELLULASE, EXPRESSED AS DIGESTIVE ACTIVITY UNITS

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

IN SENILE CONFUSION . . .



CONTINUOUS CEREBRAL OXYGENATION

WITH

ONE

Geroniazol TT* b.i.d.

- Each Geroniazol TT tablet contains:
  Pentylenetetrazol .....300 mg.
  Nicotinic Acid .....150 mg.
- Indications: Respiratory and circulatory stimulant for the aged and debilitated patient with symptoms of mental confusion, depression or atherosclerotic psychosis.
- Supplied: Bottles of 42 Tablets (3 weeks' treatment)

* TEMPOTROL (Time Controlled Therapy)

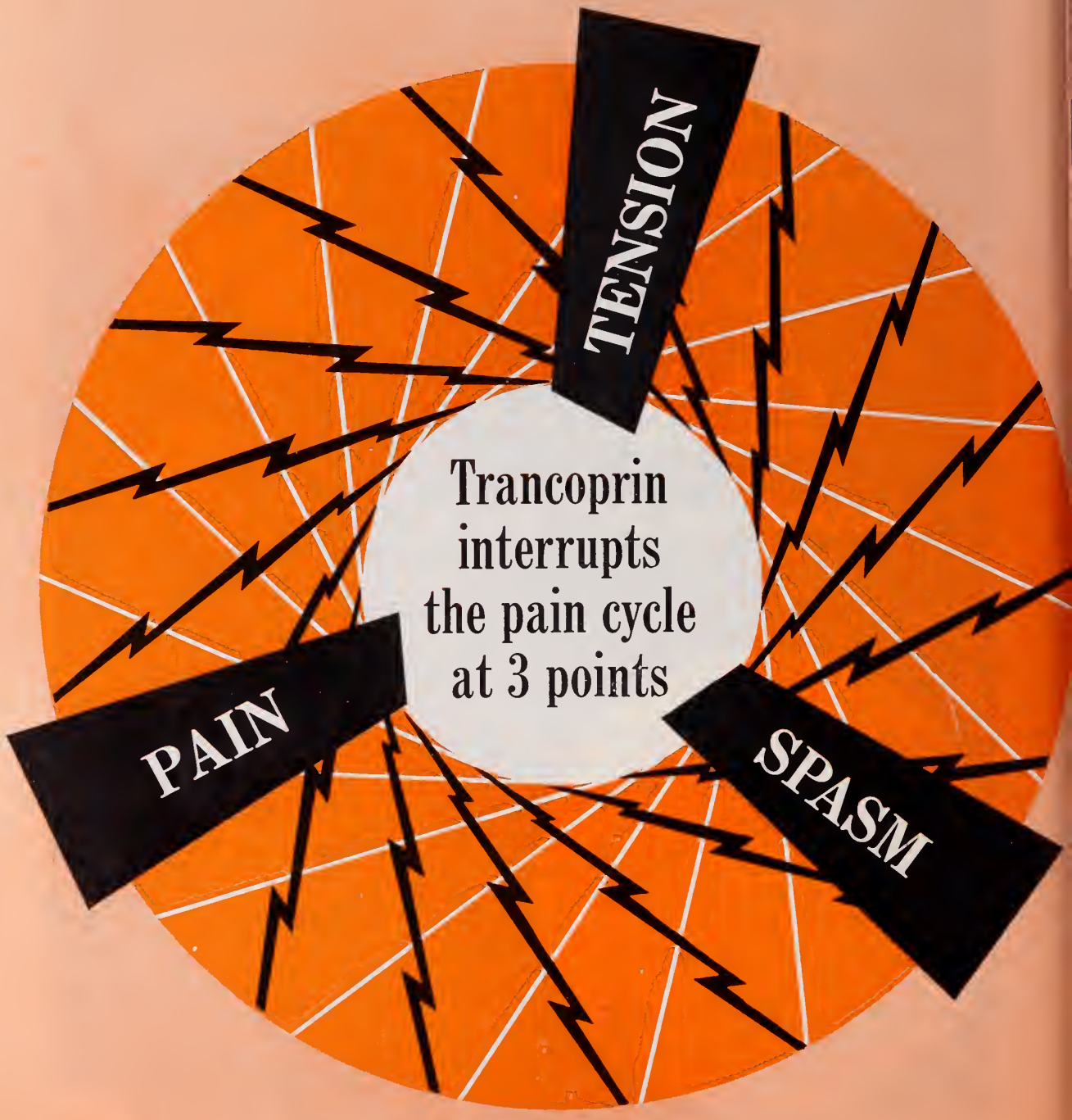
COLUMBUS PHARMACAL COMPANY
Columbus 16, Ohio

announcing...

Trancoprin

acetylsalicylic acid (300 mg.) and chlormezanone (50 mg.)

Tablets



a broad spectrum non-narcotic analgesic

Trancoprin, a new analgesic, not only raises the pain perception threshold but, through its chlormezanone component, also relaxes skeletal muscle spasm[1-6] and quiets the psyche.[2,3-5,7]

The effectiveness of Trancoprin has been demonstrated clinically[8] in a number of patients with a wide variety of painful disorders ranging from headache, dysmenorrhea and lumbago to arthritis and sciatica. In a series of 862 patients,[8] Trancoprin brought excellent or good relief of pain to 88 per cent of the group. In another series,[9] Trancoprin was administered in an industrial dispensary to 61 patients with headache, bursitis, neuritis or arthritis. The excellent results obtained prompted the prediction that Trancoprin "... will prove a valuable and safe drug for the industrial physician."[9]

Exceptionally Safe

No serious side effects have been encountered with Trancoprin. Of 923 patients treated with Trancoprin, only 22 (2.4 per cent) experienced any side effects.[8,9] In every instance, these reactions, which included temporary gastric distress, weakness or sedation, were mild and easily reversed.

Indications

Trancoprin is recommended for more comprehensive control of the pain complex (pain → tension → spasm) in those disorders in which tension and spasm are complicating factors, such as: headaches, including tension headaches / premenstrual tension and dysmenorrhea / low back pain, sciatica, lumbago / musculoskeletal pain associated with strains or sprains, myositis, fibrositis, bursitis, trauma, disc syndrome and myalgia / arthritis (rheumatoid or hypertrophic) / torticollis / neuralgia.

Dosage

The usual adult dosage is 2 Trancoprin tablets three or four times daily. The dosage for children from 5 to 12 years of age is 1 tablet three or four times daily. Trancoprin is so well tolerated that it may be taken on an empty stomach for quickest effect. The relief of symptoms is apparent in from fifteen to thirty minutes after administration and may last up to six hours or longer.

How Supplied

Each Trancoprin tablet contains 300 mg. (5 grains) of acetylsalicylic acid and 50 mg. of chlormezanone [Trancopal® brand]. Bottles of 100 and 1000.

Trancoprin Tablets / non-narcotic analgesic

References: 1. DeNyse, D. L.: *M. Times* 87:1512, Nov., 1959. 2. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 3 Gruenberg, Friedrich: *Current Therap. Res.* 2:1, Jan., 1960. 4. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960. 5. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 6. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 7. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 8. Collective Study, Department of Medical Research, Winthrop Laboratories. 9. Hergesheimer, L. H.: An evaluation of a muscle relaxant (Trancopal) alone and with aspirin (Trancoprin) in an industrial medical practice, to be submitted.

Winthrop LABORATORIES, New York 18, N. Y.

Trancoprin and Trancopal (brand of chlormezanone) trademarks reg. U.S. Pat. Off.

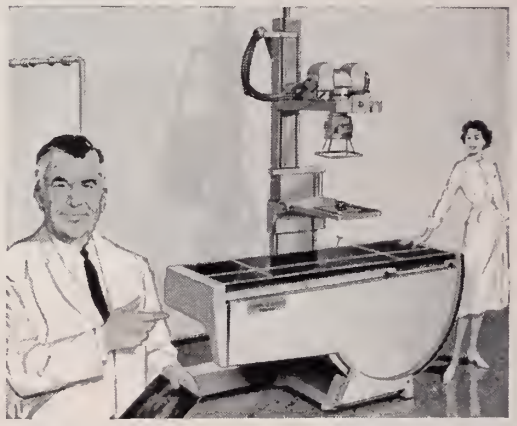
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sustains
retains



extra
antibiotic
activity

extra-activity...promptly attained

DECLOMYCIN Demethylchlortetracycline attains —usually within two hours—blood levels more than adequate to suppress susceptible pathogens. These levels are attained in tissues and body fluids on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. With other tetracyclines, the average, effective, adult daily dose is 1 Gm. With DECLOMYCIN Demethylchlortetracycline, it is only 600 mg.



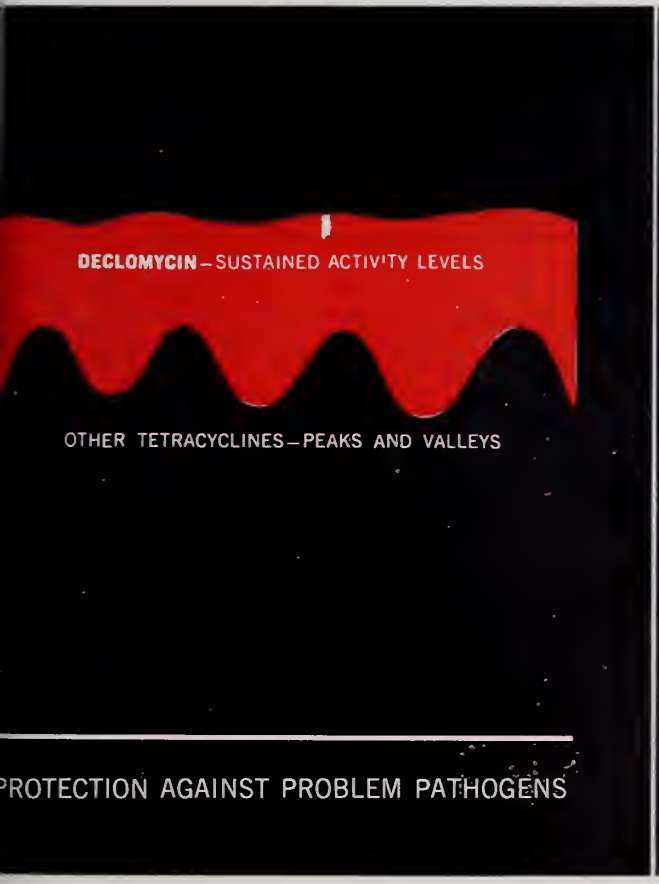
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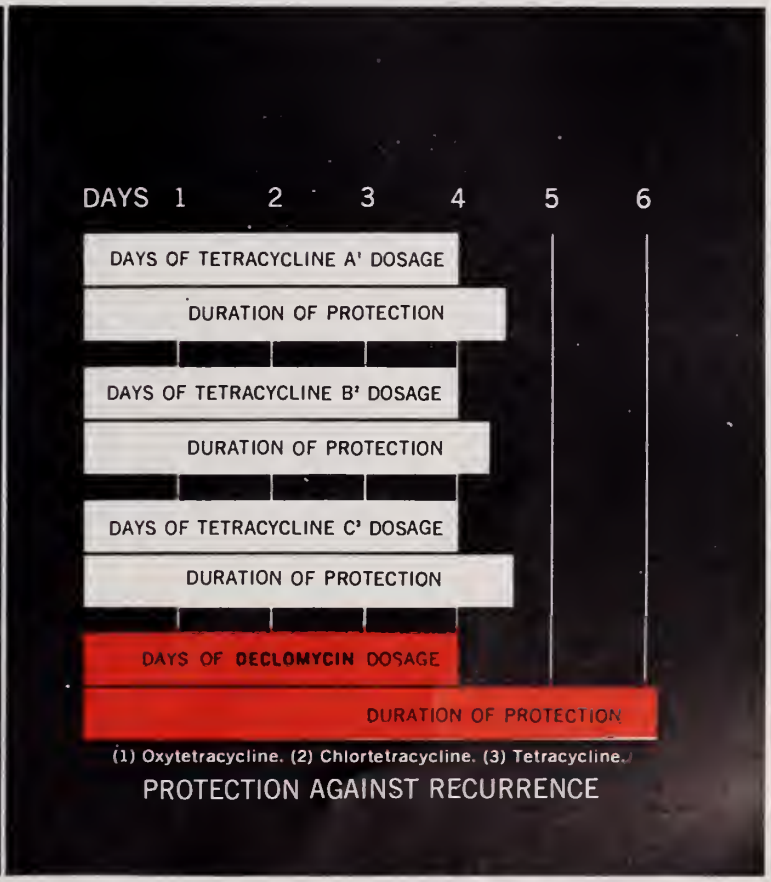
ECLOMYCIN Demethylchlortetracycline sus-ains, through the entire therapeutic course, the igh activity levels needed to control the primary nfective process and to check the onset of a com-licating secondary infection at the original—or at nother—site. This combined therapeutic action s sustained, in most instances, without the ronounced hour-to-hour, dose-to-dose, peak-nd-valley fluctuations in activity levels which haracterize other tetracyclines.

long retained

DECLOMYCIN Demethylchlortetracycline retains significant activity levels, up to 48 hours after the last dose is given. At least a full, extra day of positive antibacterial action may thus be confidently expected. One capsule four times a day, for the average adult in the average infection, is the same as with other tetracyclines—but the **total** dosage is lower and the duration of anti-infective action is longer.



PROTECTION AGAINST PROBLEM PATHOGENS



(1) Oxytetracycline. (2) Chlortetracycline. (3) Tetracycline.

PROTECTION AGAINST RECURRENCE

MYCIN®

DEMETHYLCHLORTETRACYCLINE LEDERLE

- higher activity/intake ratio—positive antibacterial action
- sustained activity levels—protection against problem pathogens
- up to two extra days' activity—protection against recurrence

CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. **Dosage:** 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

PRECAUTIONS: As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under observation.

for the
added measure
of protection
in clinical
practice

DECLOMYCIN®

DEMETHYLCHLORTETRACYCLINE LEDERLE

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

Tain

contain the bacteria-prone cold

(Triacetyloleandomycin, Triaminic® and Calurin®)



inner protection with...

safe antibiosis

Triacetyloleandomycin, equivalent to oleandomycin 125 mg. This is the URI antibiotic, clinically effective against certain antibiotic-resistant organisms.

fast decongestion

Triaminic®, 25 mg., three active components stop running noses. Relief starts in minutes, lasts for hours.

well-tolerated analgesia

Calurin®, calcium acetylsalicylate carbamide equivalent to aspirin 300 mg. This is the freely-soluble calcium aspirin that minimizes local irritation, chemical erosion, gastric damage. High, fast blood levels.

TAIN brings quick, symptomatic relief of the common cold (malaise, headache, muscular cramps, aches and pains) especially when susceptible organisms are likely to cause secondary infection. Usual adult dose is 2 Inlay-Tabs, q.i.d. In bottles of 50. ℞ only. Remember, to contain the bacteria-prone cold...TAIN.

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new clinical study[1] cites beneficial results in over 90% of cases in dry, itchy, scaly skin with Sardo®

in the bath

Use of **SARDO** in 118 dermatological patients to relieve dry, itchy, scaly, fissured skin achieved these excellent results:

CASES	AFTER SARDO*		
	Excellent	Good	Poor
49 Senile skin	32	13	4
26 Dry Skin in younger patients (diabetes, etc.)	14	11	1
20 Atopic dermatitis	8	10	2
13 Actinic changes	9	4	—
10 Ichthyosis	3	4	3
Skin Conditions	Benefited	No Benefit	
20 Nummular dermatitis	19	1	
10 Neurodermatitis	10	—	



SARDO acts[1,2] to (A) lubricate and soften skin, (B) replenish natural emollient oil, (C) prevent excessive evaporation of essential moisture.

SARDO releases millions of microfine water-miscible globules to provide a soothing suspension which enhances the efficacy of your other therapy.

SARDO is pleasant, convenient, easy to use; non-sticky, non-sensitizing. Bottles of 4, 8 and 16 oz.

1. Weissberg, G.: Clin. Med., June 1960.

2. Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

*patent pending
T.M. ©1960

for **SAMPLES** and complete reprint of Weissberg paper, please write . . .

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if you're treating a coccal infection...

you can't prescribe a more effective antibiotic than

ERYTHROCIN

Erythromycin, Abbott

How much "spectrum" do you need in treating an infection? Clearly, you want an antibiotic that will show the greatest activity against the offending organism, *and the least activity against non-pathogenic gastro-intestinal flora.*

Weigh these criteria—and make this comparison—when treating your next coccal infection. Erythrocin is a medium-spectrum antibiotic, notably effective against gram-positive organisms. In this it comes close to being a "specific" for coccal infections—*which means it is delivering a high degree of activity against the majority of common infection-producing bacteria.*

And against many of the troublesome "staph" strains—a group which shows increasing resistance to penicillin and certain other antibiotics—Erythrocin continues to provide bactericidal activity. Yet, as potent as Erythrocin is, *it rarely has a disturbing effect on normal gastro-intestinal flora.* Comes in easy-to-swallow Filmtabs®, 100 and 250 mg. Usual adult dose is 250 mg. every six hours. Children, in proportion to age and weight. Won't you try Erythrocin?

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*Floore, F. B.: Wine is Fine for Hospital Cookery, Mod. Hosp. 94:134 (June) 1960.

in common Gram-positive infections due to susceptible organisms

YOU CAN COUNT ON

TAO®*

(triacetyloleandomycin)

even in many resistant Staph*



1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, broncho-pneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

92% effectiveness in skin and soft tissue infections (900 cases including pyoderma, impetigo, acne, infected skin disorders, wounds, incisions and burns, furunculosis, abscess, cellulitis, chronic ulcer, adenitis.) **You can count on TAO.**

87.1% effectiveness in genitourinary infections (349 cases including urethritis, cystitis, pyelitis, pyelonephritis, orchitis, pelvic inflammation, acute gonococcal urethritis, lymphogranuloma venereum.) **You can count on TAO.**

75.8% effectiveness in diverse infections (62 cases including fever of undetermined origin, peritoneal abscess, osteitis, periarthritis, septic arthritis, staphylococcal enterocolitis, gastroenteritis, carriers of staphylococci.) **You can count on TAO.**

95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

* In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics. **TAO proved 93.4% effective in these 884 cases.**

Complete bibliography available on request.

DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient-jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

SUPPLY: TAO CAPSULES—250 mg. and 125 mg., bottles of 60. TAO ORAL SUSPENSION—125 mg. per 5 cc. when reconstituted, palatable cherry flavor, 60 cc. bottles. TAO PEDIATRIC DROPS—100 mg. per cc. when reconstituted, flavorful; special calibrated dropper, 10 cc. bottles. INTRAMUSCULAR or INTRAVENOUS—10 cc. vials, as oleandomycin phosphate.

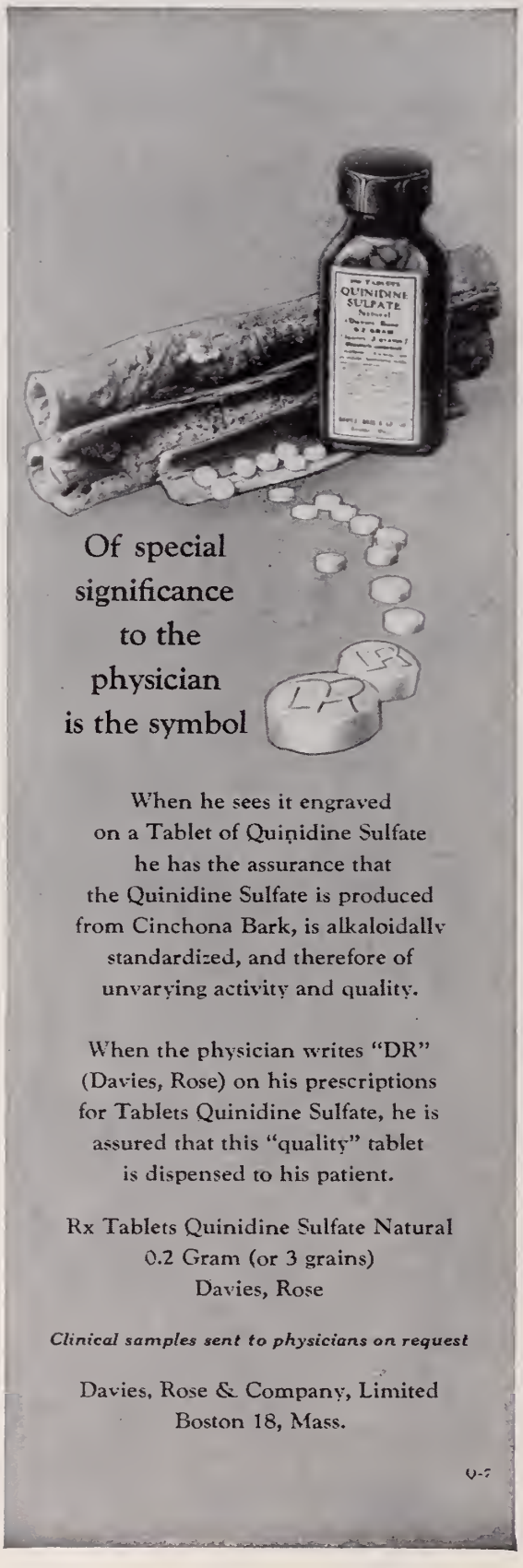
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Each AZOTREX capsule contains: TETREX® (tetracycline phosphate complex) equivalent to tetracycline HCl activity... 125 mg.; sulfamethizole... 250 mg.; phenylazo-diamino-pyridine HCl... 50 mg.
Supply: Bottles of 24 and 100.

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Div. of Bristol-Myers Co.
SYRACUSE, NEW YORK

BRISTOL™



IN COLDS AND SINUSITIS— THE RIGHT AMOUNT OF "INNER SPACE" RIGHT AWAY

Neo-Synephrine hydrochloride relieves the boggy feeling of colds immediately and safely, without causing systemic toxicity or chemical harm to nasal membranes. Turbinates shrink, sinus ostia open, ventilation and drainage resume, and mouth-breathing is no longer necessary.

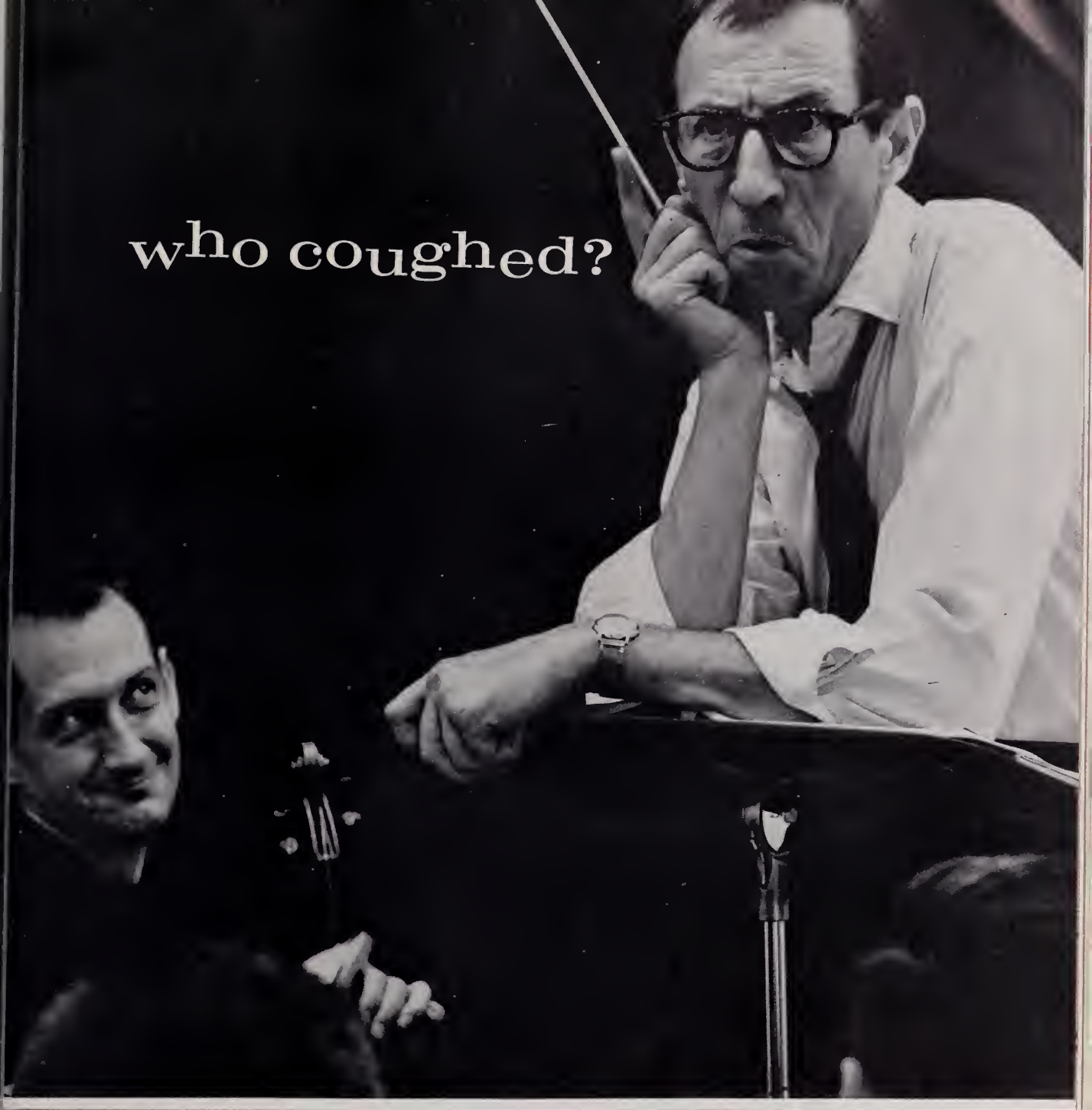
Gentle Neo-Synephrine shrinks nasal membranes for from two to three hours without stinging or harming delicate respiratory tissues. Post-therapeutic turgescence is minimal. Neo-Synephrine does not lose its effectiveness with repeated applications nor does it cause central nervous stimulation, jitters, insomnia or tachycardia.

Neo-Synephrine solutions and sprays produce shrinkage of tissue without interfering with ciliary activity or the protective mucous blanket.

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New York 18, N. Y.

NEO-SYNEPHRINE®
(Brand of phenylephrine hydrochloride)
hydrochloride
NASAL SOLUTIONS AND SPRAYS

For wide latitude of effective and safe treatment, Neo-Synephrine hydrochloride is available in nasal sprays for adults and children; in solutions from 1/8% to 1%; and in aromatic solution and water soluble jelly.



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HYCOMINE® Syrup

THE COMPLETE Rx FOR COUGH CONTROL

cough sedative / antihistamine
decongestant / expectorant

■ relieves cough and associated symptoms in 15-20 minutes ■ effective for 6 hours or longer ■ promotes expectoration ■ rarely constipates ■ agreeably cherry-flavored

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Dihydrocodeinone Bitartrate . . . . . 5 mg.	6.5 mg.
(Warning: May be habit-forming)	
Homatropine Methylbromide . . . . . 1.5 mg.	
Pyrilamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10 mg.
Ammonium Chloride	60 mg.
Sodium Citrate	85 mg.

Average adult dose: One teaspoonful after meals and at bedtime.
May be habit-forming. Federal law permits oral prescription.

Literature on request
ENDO LABORATORIES
Richmond Hill 18, New York

*U.S. Pat. 2,630,400

now–for more comprehensive control of *'pain & spasm'*



INDICATIONS

HEAD: temporomandibular muscle spasm • NECK: acute torticollis, osteoarthritis of cervical spine with spasm of cervical muscles, whiplash injury • TRUNK AND CHEST: costochondritis, intercostal myositis, xiphodynia • BACK: acute and chronic lumbar strains and sprains, acute low back pain (unspecified), acute lumbar arthritis and traumatic injury, compression fracture, herniated intervertebral disc, post-disc syndrome, strained muscle(s) • EXTREMITIES: acute hip injury with muscle spasm, ankle sprain, arthritis (as of foot or knee), blow to shin followed by muscle spasm, bursitis, spasm or strain of muscle or muscle group, old fracture with recurrent spasm, Pellegrini-Stieda disease, tenosynovitis with associated pain and spasm.

-pain due to
or associated with
-spasm of skeletal muscle

a new muscle relaxant-analgesic



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ROBAXIN® WITH ASPIRIN

Many conditions, painful in themselves, often give rise to spasm of skeletal muscles. ROBAXISAL, the new dual-acting muscle relaxant-analgesic, treats both the pain and the spasm with marked success: In clinical studies on 311 patients, 12 investigators[1] reported satisfactory results in 86.5%. Each ROBAXISAL Tablet contains:

- A relaxant component—Robaxin*—widely recognized for its prompt, long-lasting relief of painful skeletal muscle spasm, with unusual freedom from undesired side effects. . . . . 400 mg.

*Methocarbamol Robins. U.S. Pat. No. 2770649.

- An analgesic component—aspirin—whose pain-relieving effect is markedly enhanced by Robaxin, and which has added value as an anti-inflammatory and anti-rheumatic agent. . . . (5 gr.) 325 mg.

SUPPLY: ROBAXISAL Tablets (pink-and-white, laminated) in bottles of 100 and 500.

Also available: ROBAXIN Injectable, 1.0 Gm. in 10-cc. ampul. ROBAXIN Tablets, 0.5 Gm. (white, scored) in bottles of 50 and 500.

. . . or when anxiety accompanies pain and spasm: ROBAXISAL-PH (Robaxin® with Phenaphen®). Sedative-enhanced analgesic and skeletal muscle relaxant. Each two white-and-green laminated ROBAXISAL-PH tablets contain: methocarbamol 800 mg., plus the equivalent of one Phenaphen capsule (phenacetin 194 mg., acetylsalicylic acid 162 mg., hyoscyamine sulfate 0.031 mg., and ⅛ gr. phenobarbital 16.2 mg.). Bottles of 100 and 500.

[1]Clinical reports in files of A. H. Robins Co., Inc., from: J. Allen, Madison, Wisc., B. Billow, New York, N. Y., B. Decker, Richmond, Va., C. Freeman, Jr., Augusta, Ga., R. B. Gordon, New York, N. Y., J. E. Holmblad, Schenectady, N. Y., I. Levy, New York, N. Y., N. LoBue, Chicago Heights, Ill., H. Nachman, Richmond, Va., A. Poindexter, Los Angeles, Cal., E. Rogers, Brooklyn, N. Y., K. H. Stroog, Fairfield, Ia.

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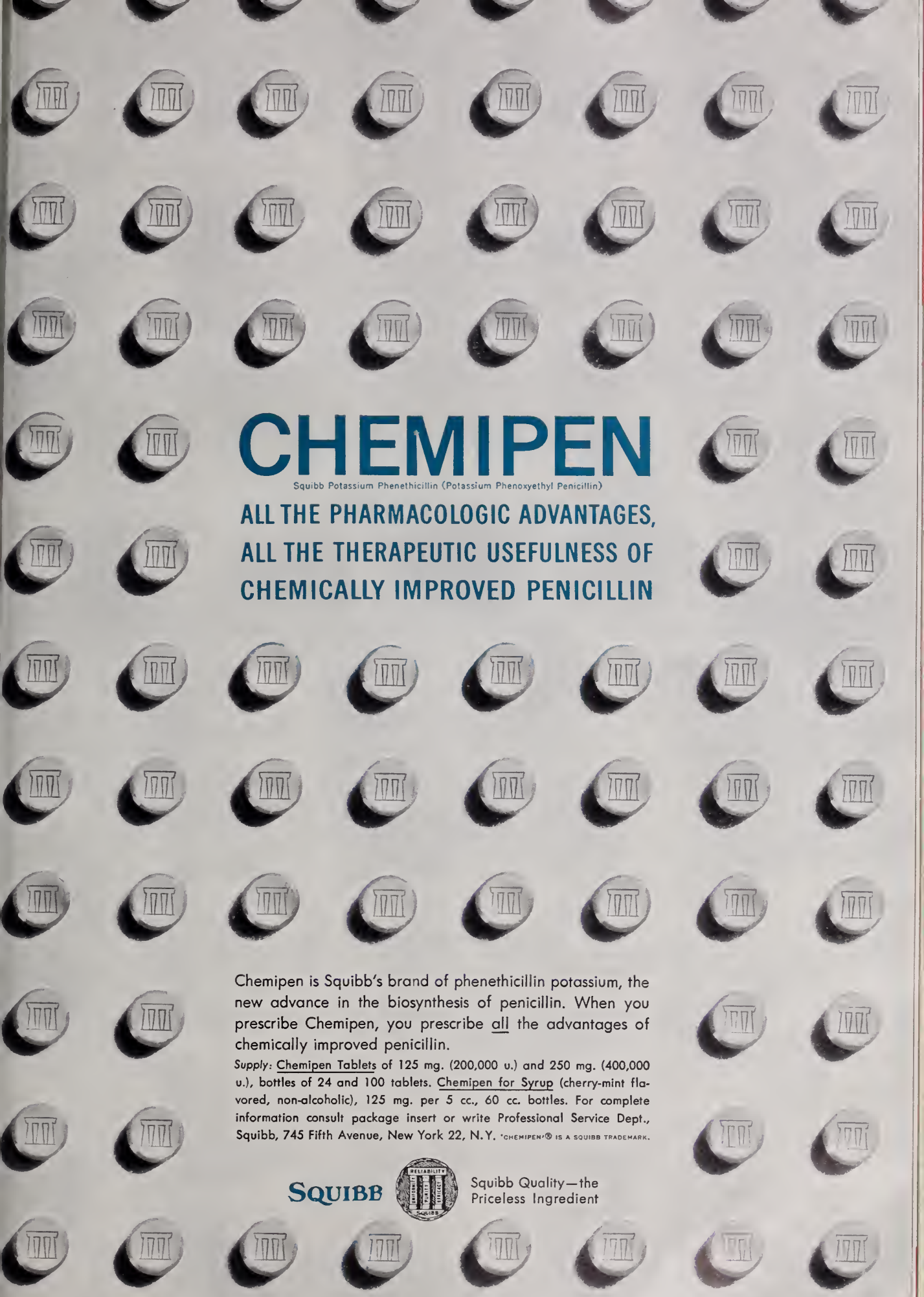
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Squibb Potassium Phenethicillin (Potassium Phenoxyethyl Penicillin)

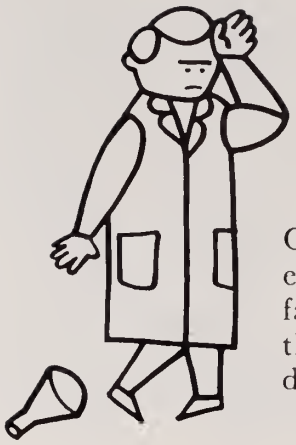
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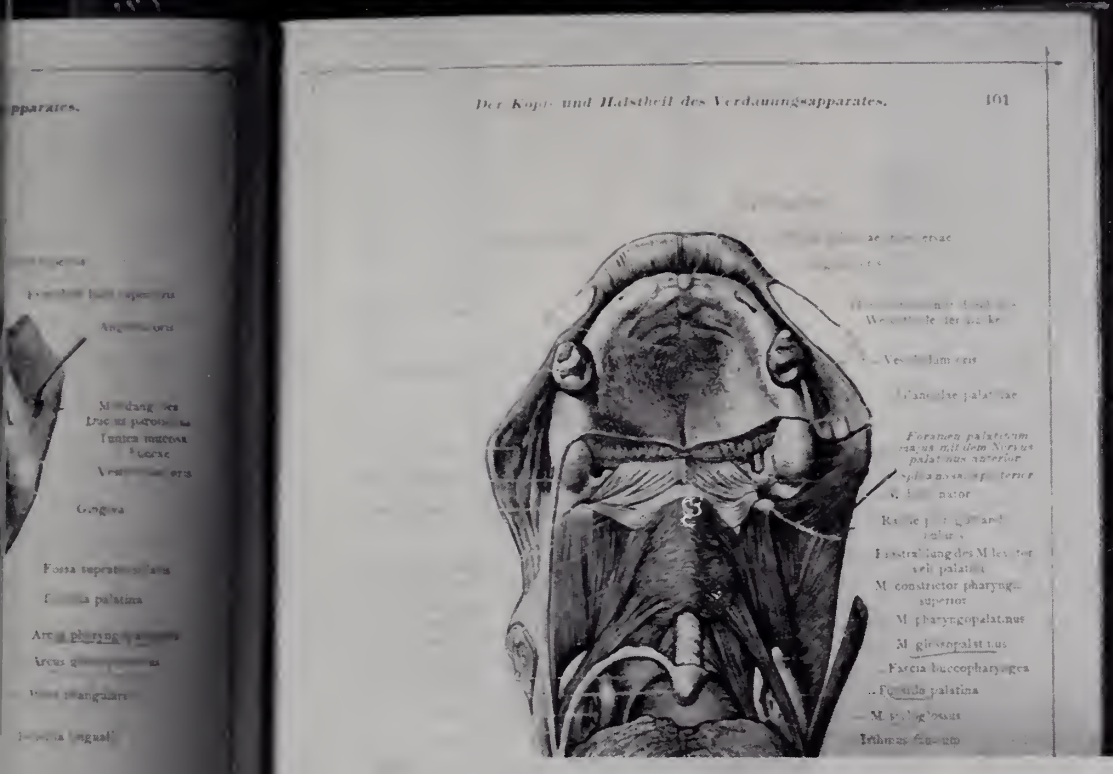
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A dosage form to meet the individual requirements of patients of all ages in home, office, clinic, and hospital:

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Syncillin for Oral Solution – 60 ml. bottles – when reconstituted, 125 mg. (200,000 units) per 5 ml.
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Complete information on indications, dosage and precautions is included in the circular accompanying each package.

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Actual case summary from the files of Bristol Laboratories' Medical Department

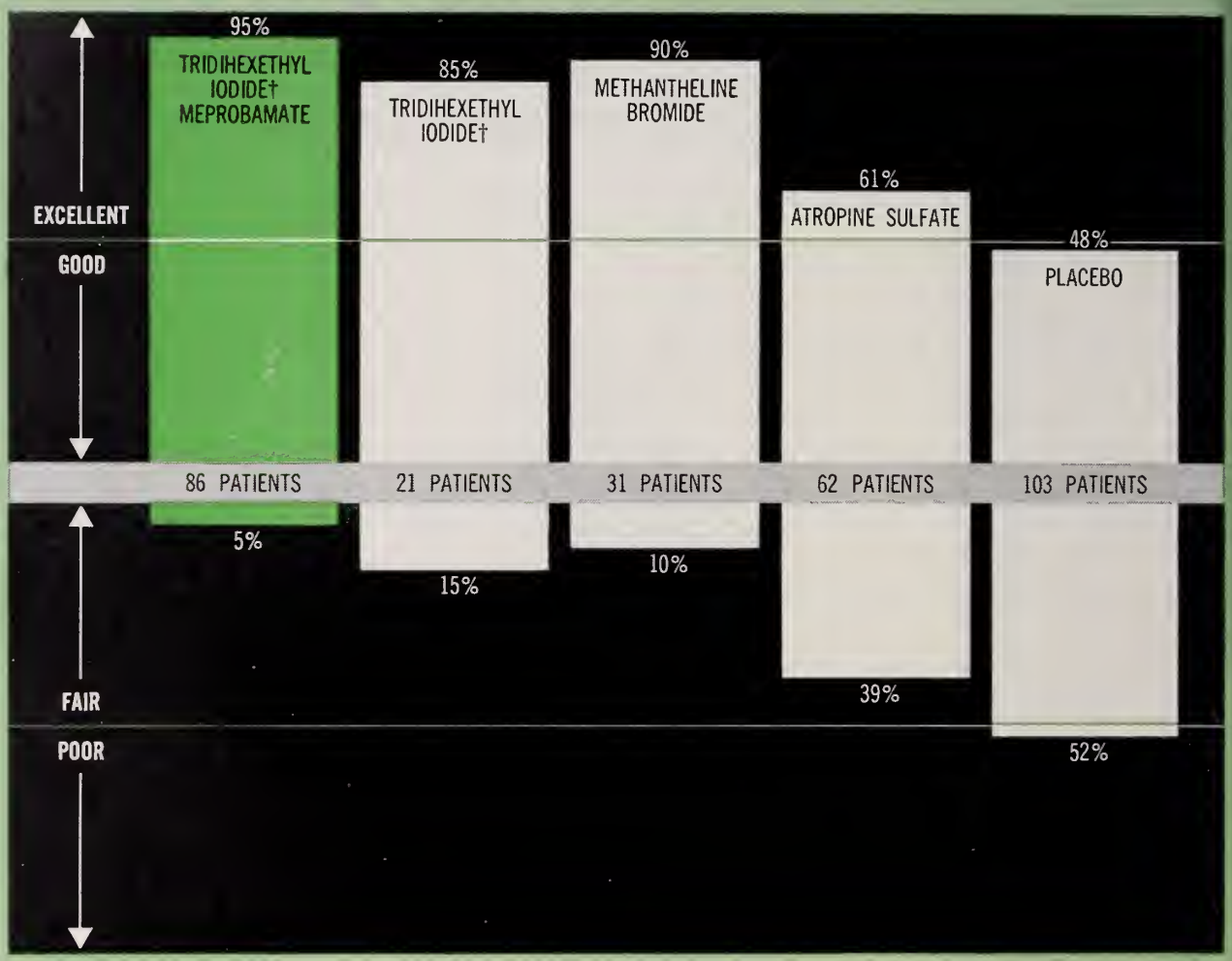
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STOMATITIS	1%	0%	28%	14%	0%
VISUAL DISTURBANCES	0%	0%	50%	34%	1%
URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	20%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
RECURRENCES					
NONE	28%	23%	25%	17%	26%
FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. Am. J. Digest. Dis. 4:1055 (Dec.) 1959.

†PATHILON is now supplied as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could distort the results of certain thyroid function tests.

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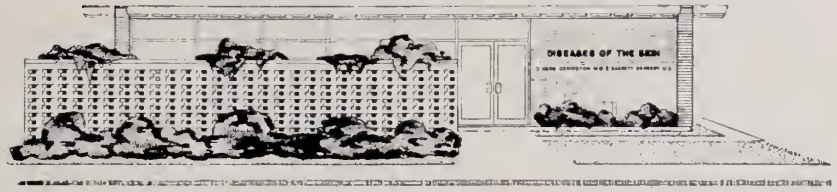
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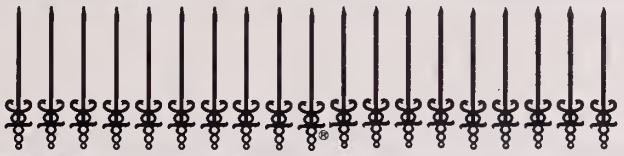
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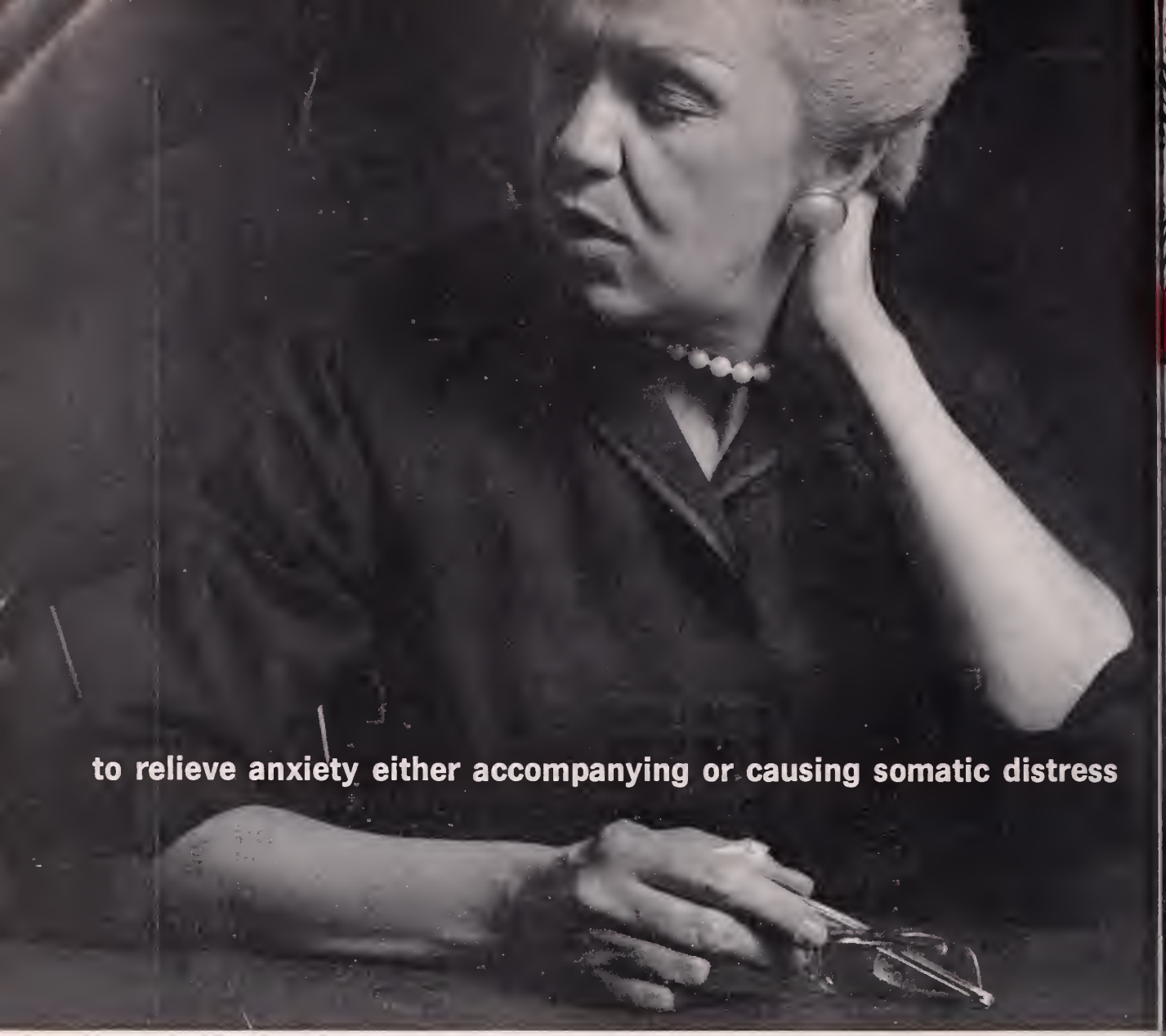


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1. Marx, F.J., in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, p. 89.
2. Winkelman, N.W., Jr.: *ibid.*, p. 78.

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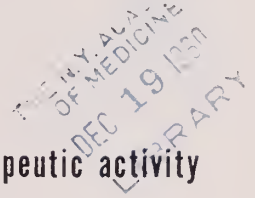
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DESCRIPTION

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Each dry filled vial contains: 1 Gm. STAPHCILLIN (sodium dimethoxyphenyl penicillin), equivalent to 900 mg. dimethoxyphenyl penicillin activity.

INDICATIONS

STAPHCILLIN is recommended as specific therapy only in infections due to strains of staphylococci resistant to other penicillins, e.g.:

Skin and soft tissue infections: cellulitis, wound infections, carbuncles, pyoderma, furunculosis, lymphangitis and lymphadenitis.

Respiratory infections: staphylococcal lobar or bronchopneumonia, and lung abscesses combined with indicated surgical treatment.

Other infections: staphylococcal septicemia, bacteremia, acute or subacute endocarditis, acute osteomyelitis and enterocolitis.

Infections due to penicillin-sensitive staphylococci, streptococci, pneumococci and gonococci should be treated with Syncillin® or parenteral penicillin G rather than STAPHCILLIN. Treponemal infections should be treated with parenteral penicillin G.

DOSAGE AND ADMINISTRATION

STAPHCILLIN is well tolerated when given by deep intragluteal or intravenous injection.

As is the case with other antibiotics, the duration of therapy should be determined by the clinical and bacteriological response of the patient. Therapy should be continued for at least 48 hours after the patient has become afebrile, asymptomatic and cultures are negative. The usual duration has been 5-7 days.

Intramuscular route: The usual adult dose is 1 Gm. every 4 or 6 hours. Infants' and children's dosage is 25 mg. per Kg. (approximately 12 mg. per pound) every 6 hours.

Intravenous route: 1 Gm. every 6 hours using 50 ml. of sterile saline solution at the rate of 10 ml. per minute.

**Warning:* Solutions of STAPHCILLIN and kanamycin should not be mixed, as they rapidly inactivate each other. Data on the results of mixing STAPHCILLIN with other antibiotics are being accumulated.

DIRECTIONS FOR RECONSTITUTION

Add 1.5 ml. sterile distilled water or normal saline to a 1 Gm. vial and shake vigorously. Withdraw the clear, reconstituted solution (2.0 ml.) into a syringe and inject. The reconstituted solution contains 500 mg. of STAPHCILLIN per ml. Reconstituted solutions are stable for 24 hours under refrigeration.

For intravenous use, dilute the reconstituted dose in 50 ml. of sterile saline and inject at the rate of 10 ml. per minute.

*This statement supersedes that in the Official Package Circulars dated September and/or October, 1960.

(continued)

MICROBIOLOGICAL AND PHARMACOLOGICAL PROPERTIES

In vitro studies show that STAPHCILLIN is a bactericidal penicillin with activity against staphylococci resistant to penicillin G. Strains of staphylococci so far tested have been sensitive to STAPHCILLIN *in vitro* at concentrations of 1-6 mcg. per ml. These levels are readily attained in the blood and tissues by administration of STAPHCILLIN at the recommended dosage. This unique attribute is probably due to the fact that STAPHCILLIN is stable in the presence of staphylococcal penicillinase. STAPHCILLIN also resists degradation by *B. cereus* penicillinase. The antomicrobial spectrum of STAPHCILLIN with regard to other microorganisms is qualitatively similar to that of penicillin G; but considerably higher concentrations of STAPHCILLIN are required for bactericidal activity than is the case with penicillin G.

STAPHCILLIN is rapidly absorbed after intramuscular injection. Peak blood levels (6-10 mcg./ml. on the average after a 1.0 Gm. dose) are attained within 1 hour; and then progressively decline to less than 1 mcg. over a 4 to 6 hour period. It is poorly absorbed from the gastrointestinal tract. STAPHCILLIN is rapidly excreted by the kidney.

As shown by animal studies, STAPHCILLIN is readily distributed in body tissues after intramuscular injection. Of the tissues studied, highest concentrations are reached in the kidney, liver, heart and lung in that order; the spleen and muscles show lower concentrations of the antibiotic. STAPHCILLIN diffuses into human pleural and prostatic fluids, but its diffusion into the spinal fluid has not yet been completely studied. However, one patient with meningitis showed a significant concentration in his spinal fluid while on STAPHCILLIN therapy.

Toxicity studies with STAPHCILLIN and penicillin G in animals show that they have approximately the same low order of toxicity.

Certain staphylococci can be made resistant to STAPHCILLIN in the laboratory, but this resistance is not related to their penicillinase production. During the clinical trials, no STAPHCILLIN-resistant strains of staphylococci were observed or developed; the possibility of the emergence of such strains in the clinical setting awaits further observation.

PRECAUTIONS

During the clinical trials, several mild skin reactions, e.g., itching, papular eruption and erythema were observed both during and after discontinuance of STAPHCILLIN therapy. Patients with histories of hay fever, asthma, urticaria and previous sensitivity to penicillin are more likely to react adversely to the penicillins. It is important that the possibility of penicillin anaphylaxis be kept in mind. Epinephrine and the usual adjuvants (antihistamines, corticosteroids) should be available for emergency treatment. Because of the resistance of STAPHCILLIN to destruction by penicillinase, parenteral *B. cereus* penicillinase may not be effective for the treatment of allergic reactions. Information with regard to cross-allergenicity between penicillin G, penicillin V, phenethicillin (Syncillin) and STAPHCILLIN is not available at present. If superinfection due to Gram-negative organisms or fungi occurs during STAPHCILLIN therapy, appropriate measures should be taken.

SUPPLY

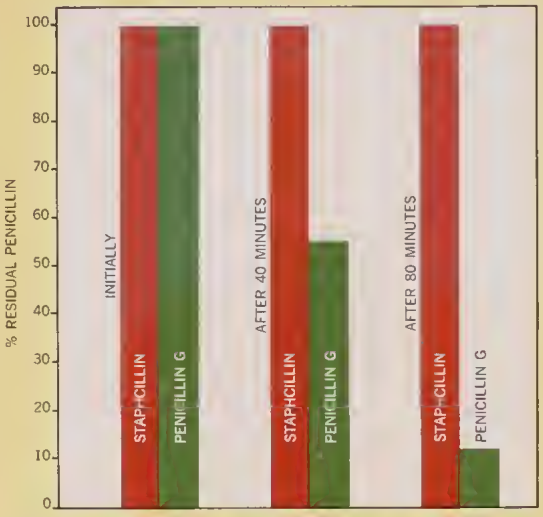
List 79502 — 1.0 Gm. dry filled vial.

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UNIQUE SYNTHETIC "STAPH-CIDAL" PENICILLIN

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In the presence of staphylococcal penicillinase, STAPHCILLIN remained active and retained its antibacterial action. By contrast, penicillin G was rapidly destroyed in the same period of time. *(After Gourevitch et al., to be published)*

Specifically for "resistant" staph...

Staphcillin™

sodium dimethoxyphenyl penicillin
FOR INJECTION

The failure of staphylococcal infections to respond to penicillin therapy is attributed to the penicillin-destroying enzyme, penicillinase, produced by the invading staphylococcus.

Unlike other penicillins:

1 STAPHCILLIN is effective because it retains its antibacterial activity despite the presence of staphylococcal penicillinase.

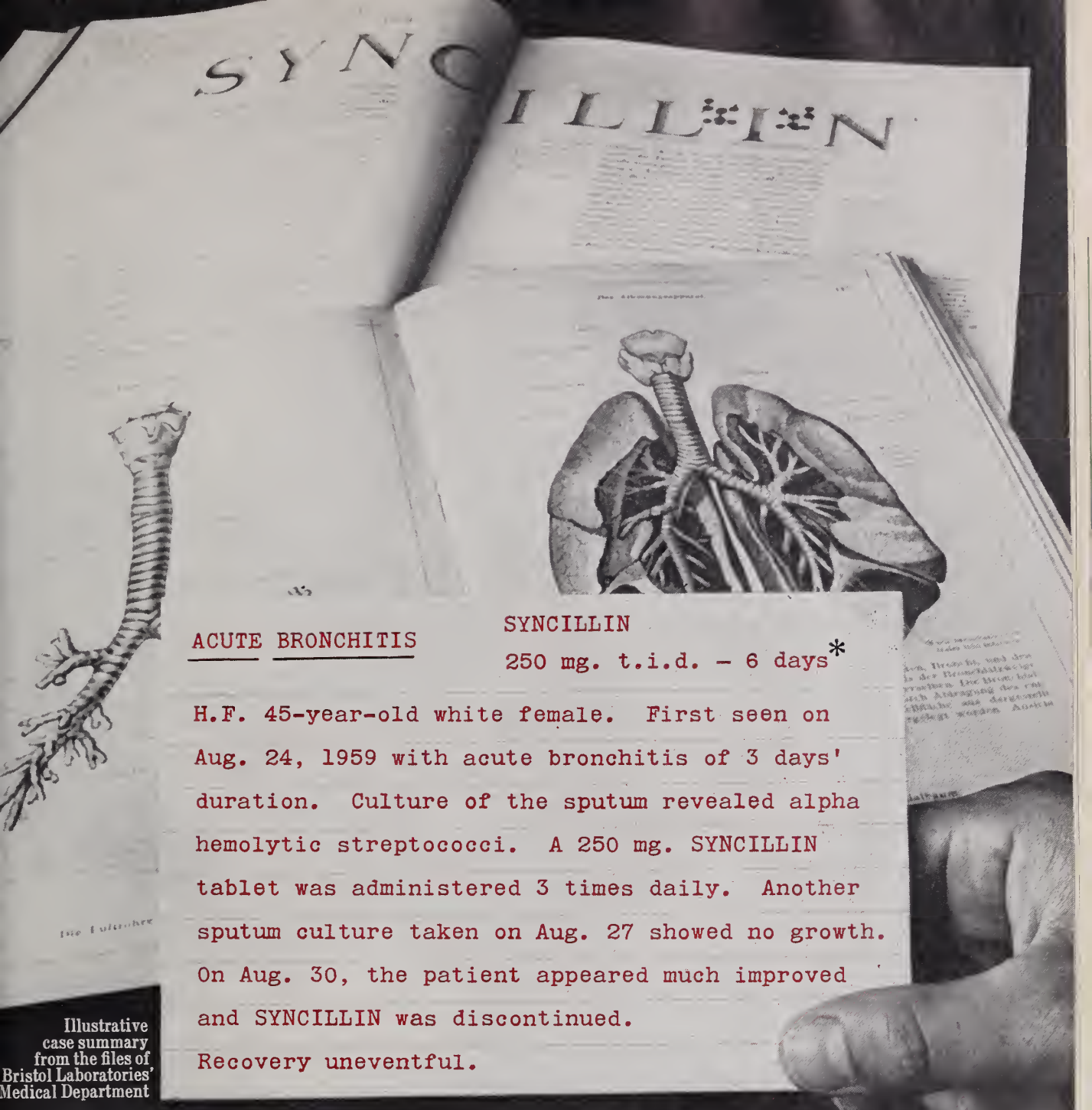
2 The clinical effectiveness of STAPHCILLIN has been confirmed by dramatic results in a wide variety of infections due to "resistant" staphylococci, many of which were serious and life-threatening.

Like other penicillins:

STAPHCILLIN has no significant systemic toxicity. It is well tolerated locally, and pain or irritation at the injection site is comparable to that following the injection of penicillin G. *In occasional cases, typical penicillin reactions may be experienced.*

PROFESSIONAL INFORMATION SERVICE — The attached Official Package Circular provides complete information on the indications, dosage, and precautions for the use of STAPHCILLIN. If you desire additional information concerning clinical experiences with STAPHCILLIN, the Medical Department of Bristol Laboratories is at your service. You may direct your inquiries via collect telephone call to New York, PLaza 7-7061, or by mail to Medical Department, Bristol Laboratories, 630 Fifth Ave., N. Y. 20, N. Y.

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Division of Bristol-Myers Company



ACUTE BRONCHITIS

SYNCILLIN
250 mg. t.i.d. – 6 days*

H.F. 45-year-old white female. First seen on Aug. 24, 1959 with acute bronchitis of 3 days' duration. Culture of the sputum revealed alpha hemolytic streptococci. A 250 mg. SYNCILLIN tablet was administered 3 times daily. Another sputum culture taken on Aug. 27 showed no growth. On Aug. 30, the patient appeared much improved and SYNCILLIN was discontinued. Recovery uneventful.

Illustrative case summary from the files of Bristol Laboratories' Medical Department

THE ORIGINAL phenethicillin

SYNCILLIN®

(phenoxyethyl penicillin potassium)

FIRST SYNTHESIZED AND MADE AVAILABLE BY BRISTOL LABORATORIES

A dosage form to meet the individual requirements of patients of all ages in home, office, clinic, and hospital:
Syncillin Tablets—250 mg. (400,000 units)...Syncillin Tablets—125 mg. (200,000 units)
Syncillin for Oral Solution—60 ml. bottles—when reconstituted, 125 mg. (200,000 units) per 5 ml.
Syncillin Pediatric Drops—1.5 Gm. bottles. Calibrated dropper delivers 125 mg. (200,000 units)

*Streptococcal infections should be treated for at least 10 days to prevent the development of rheumatic fever and as prophylaxis against bacterial endocarditis in susceptible patients.

Complete information on indications, dosage and precautions is included in the circular accompanying each package.

BRISTOL LABORATORIES, Div. of Bristol-Myers Co., SYRACUSE. N.Y.



for every phase of cough... comprehensive relief

AMBENYL® EXPECTORANT

AMBENYL EXPECTORANT quickly comforts the coughing patient because it is formulated to relieve all phases of cough due to upper respiratory infections or allergies. Combining Ambodryl®—potent antihistaminic; Benadryl®—the time-tested antihistaminic-antispasmodic; and three well-recognized antitussive agents, AMBENYL EXPECTORANT:

• soothes irritation • quiets the cough reflex • decongests nasal mucosa • facilitates expectoration • decreases bronchial spasm • and tastes good, too.

Each fluidounce of AMBENYL EXPECTORANT * contains:

Ambodryl® hydrochloride (bromodiphenhydramine hydrochloride, Parke-Davis)	24 mg.
Benadryl® hydrochloride (diphenhydramine hydrochloride, Parke-Davis)	56 mg.
Dihydrocodeinone bitartrate	⅙ gr.
Ammonium chloride	8 gr.
Potassium guaiacolsulfonate	8 gr.
Menthol	q.s.
Alcohol	5%

Supplied: Bottles of 16 ounces and 1 gallon.

Dosage: Every three or four hours—adults, 1 to 2 teaspoonfuls; children ½ to 1 teaspoonful. 27160

* Exempt narcotic

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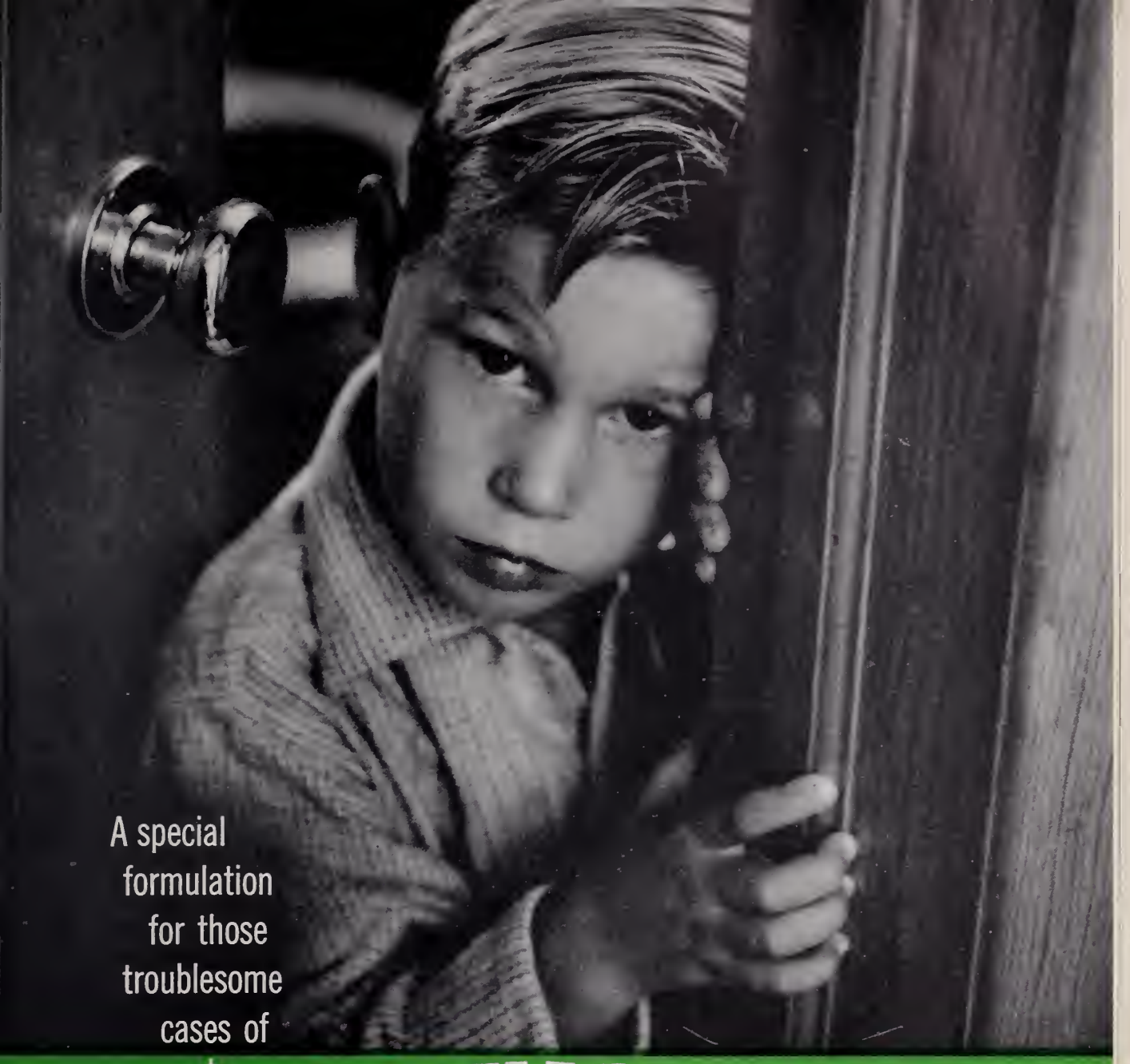
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Donnagel® with paregoric equivalent

Provides greater assurance of more comprehensive relief in acute self-limiting diarrheas through the time-tested effectiveness of two outstanding antidiarrheals—DONNAGEL and a paregoric equivalent. *Tastes good, too!*

Each 30 cc. (1 fl. oz.) of DONNAGEL-PG contains:

Powdered opium U.S.P. (equivalent to paregoric 6 ml.)	24.0 mg.
Kaolin	6.0 Gm.
Pectin	142.8 mg.
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hyoscyamine sulfate	0.1037 mg.
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Phenobarbital (1/4 gr.)	16.2 mg.

SUPPLIED: Pleasant-tasting banana flavored suspension in bottles of 6 fl. oz.

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DONNAGEL® with NEOMYCIN — for control of bacterial diarrheas.

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Miltown®

meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets.
Also as MEPROLABS* — 400 mg. *unmarked*, coated tablets; and as MEPROSPAN® — 400 mg. and 200 mg. *continuous release* capsules.

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...for the tense and nervous patient

Despite the introduction in recent years of "new and different" tranquilizers, Miltown continues, quietly and steadfastly, to gain in acceptance. Meprobamate (Miltown) is prescribed by the medical profession more than any other tranquilizer in the world.

The reasons are not hard to find. Miltown is a ***known*** drug. Its few side effects have been fully reported. ***There are no surprises in store for either the patient or the physician.***

NEW analgesic

Kills pain



stops tension

For neuralgias, dysmenorrhea, upper respiratory distress, postsurgical conditions... new compound kills pain, stops tension, reduces fever—gives more complete relief than other analgesics.

Soma Compound is an entirely new, totally different analgesic combination that contains three drugs. First, Soma: a new type of analgesic that has proved to be highly effective in relieving both pain and tension.* Second, phenacetin: a "standard" analgesic and antipyretic. Third, caffeine: a safe, mild stimulant for elevation of mood. As a result, the patient gets more complete relief than he does with other analgesics.

Soma Compound is nonnarcotic and nonaddicting. It reduces pain perception without impairing the natural defense reflexes.*

NEW NONNARCOTIC ANALGESIC

soma® Compound

Composition: Soma (carisoprodol), 200 mg.; phenacetin, 160 mg.; caffeine, 32 mg.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 apricot-colored, scored tablets.

NEW FOR MORE SEVERE PAIN

soma® Compound + codeine

BOOSTS THE EFFECTIVENESS OF CODEINE: Soma Compound boosts the effectiveness of codeine. Therefore, only ¼ grain of codeine phosphate is supplied to relieve the more severe pain that usually requires ½ grain.

Composition: Same as Soma Compound plus ¼ grain codeine phosphate.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 white, lozenge-shaped tablets; subject to Federal Narcotics Regulations.

References available on request.

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oxymetholone
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■ PROMOTES AND MAINTAINS POSITIVE NITROGEN BALANCE ■ HELPS RESTORE APPETITE, STRENGTH, AND VIGOR ■ BUILDS FIRM, LEAN MUSCULAR TISSUE ■ FAVORABLY INFLUENCES CALCIUM AND PHOSPHORUS METABOLISM ■ PROMOTES A SENSE OF WELL-BEING

ADROYD PROVIDES HIGH ANABOLIC ACTIVITY – The tissue-building potential of ADROYD exceeds its androgenic action to the extent that masculinizing effects have not been a problem in clinical use.* Other advantages of ADROYD are: Neither estrogenic nor progestational. No significant fluid retention. Apparent freedom from nausea, vomiting, and other gastrointestinal disturbances. Effective by the oral route.

See medical brochure, available to physicians, for details of administration and dosage.

Supplied: 10-mg. scored tablets, bottles of 30. 48760

*Reports to Department of Clinical Investigation, Parke, Davis & Company, 1958 and 1959.

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CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

In rheumatoid arthritis with diabetes mellitus. A 54-year-old diabetic with a four-year history of arthritis was started on DECADRON, 0.75 mg./day, to control severe symptoms. After a year of therapy with 0.5 to 1.5 mg. daily doses of DECADRON, she has had no side effects and diabetes has not been exacerbated. She is in clinical remission.*

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*From a clinical investigator's report to Merck Sharp & Dohme.

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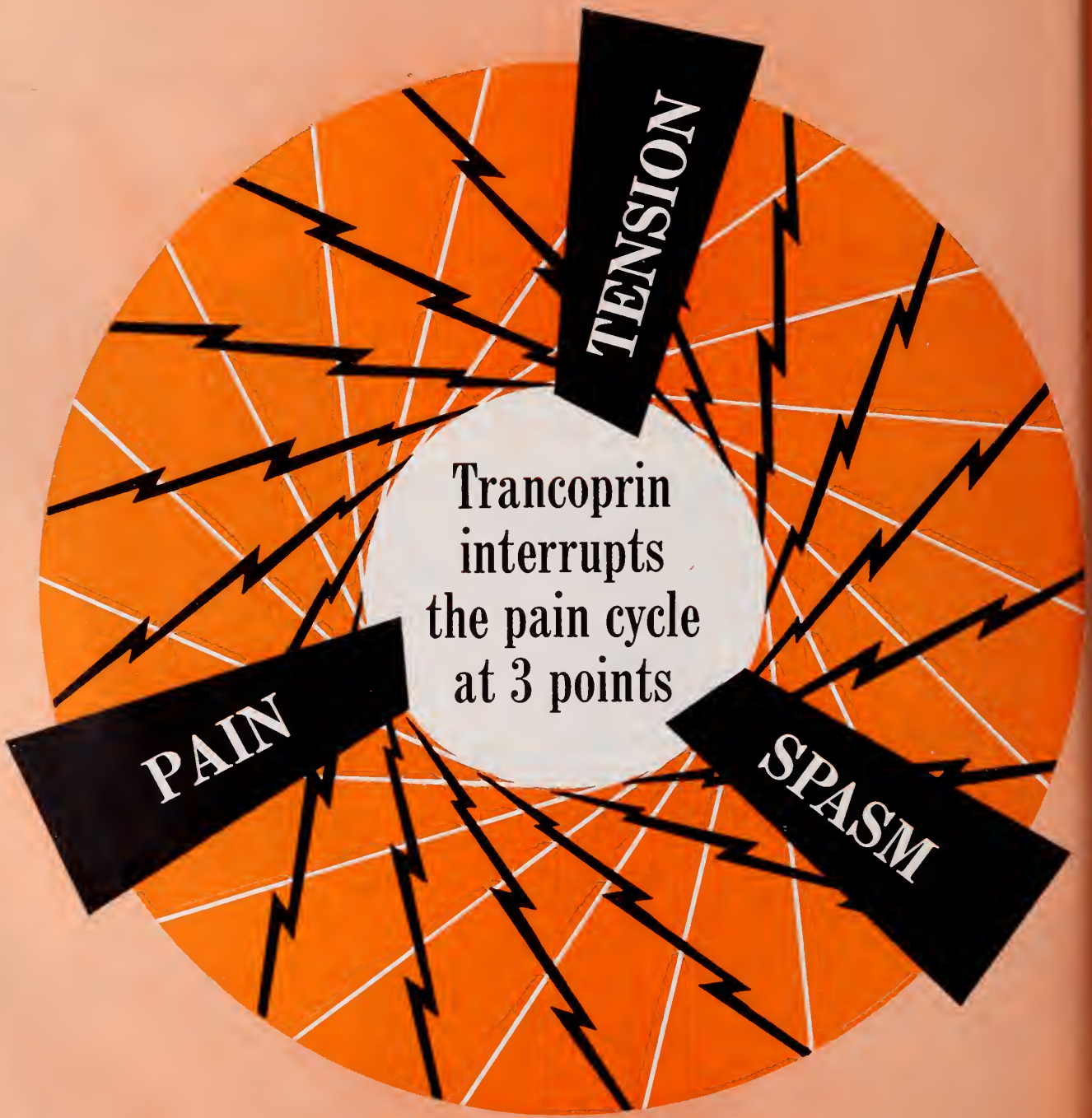


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acetylsalicylic acid (300 mg.) and chlormezanone (50 mg.)

Tablets



a broad spectrum non-narcotic analgesic

Trancoprin, a new analgesic, not only raises the pain perception threshold but, through its chlormezanone component, also relaxes skeletal muscle spasm[1-6] and quiets the psyche.[2,3-5,7]

The effectiveness of Trancoprin has been demonstrated clinically[8] in a number of patients with a wide variety of painful disorders ranging from headache, dysmenorrhea and lumbago to arthritis and sciatica. In a series of 862 patients,[8] Trancoprin brought excellent or good relief of pain to 88 per cent of the group. In another series,[9] Trancoprin was administered in an industrial dispensary to 61 patients with headache, bursitis, neuritis or arthritis. The excellent results obtained prompted the prediction that Trancoprin "... will prove a valuable and safe drug for the industrial physician."[9]

Exceptionally Safe

No serious side effects have been encountered with Trancoprin. Of 923 patients treated with Trancoprin, only 22 (2.4 per cent) experienced any side effects.[8,9] In every instance, these reactions, which included temporary gastric distress, weakness or sedation, were mild and easily reversed.

Indications

Trancoprin is recommended for more comprehensive control of the pain complex (pain → tension → spasm) in those disorders in which tension and spasm are complicating factors, such as: headaches, including tension headaches / premenstrual tension and dysmenorrhea / low back pain, sciatica, lumbago / musculoskeletal pain associated with strains or sprains, myositis, fibrositis, bursitis, trauma, disc syndrome and myalgia / arthritis (rheumatoid or hypertrophic) / torticollis / neuralgia.

Dosage

The usual adult dosage is 2 Trancoprin tablets three or four times daily. The dosage for children from 5 to 12 years of age is 1 tablet three or four times daily. Trancoprin is so well tolerated that it may be taken on an empty stomach for quickest effect. The relief of symptoms is apparent in from fifteen to thirty minutes after administration and may last up to six hours or longer.

How Supplied

Each Trancoprin tablet contains 300 mg. (5 grains) of acetylsalicylic acid and 50 mg. of chlormezanone [Trancopal® brand]. Bottles of 100 and 1000.

Trancoprin Tablets / non-narcotic analgesic

References: 1. DeNyse, D. L.: *M. Times* 87:1512, Nov., 1959. 2. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 3 Gruenberg, Friedrich: *Current Therap. Res.* 2:1, Jan., 1960. 4. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960. 5. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 6. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 7. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 8. Collective Study, Department of Medical Research, Winthrop Laboratories. 9. Hergesheimer, L. H.: An evaluation of a muscle relaxant (Trancopal) alone and with aspirin (Trancoprin) in an industrial medical practice, to be submitted.

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effective control of pathogens...with an unsurpassed record of safety and tolerance



SUPPLY: TETREX Capsules – tetracycline phosphate complex – each equivalent to 250 mg. tetracycline HCl activity. Bottles of 16 and 100.

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Finally—most important—Filmtab guarantees that the content of each tablet matches the formula printed on the label. While the person taking the vitamins may not worry much about rigid stability, Abbott does. *Assures* it, through Filmtab.

In short, Filmtab's a name that stands for quality, stability, potency. The very best in vitamin coatings. Filmtab doesn't add a penny to the cost. And it's a name found *only* on

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Therapeutic formula of the essential B-complex plus C, for convalescence, stress, post-surgery, etc.

EACH DAYTEENS FILMTAB® REPRESENTS:

Vitamin A	(5000 units) 1.5 mg.
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Thiamine Mononitrate (B_1)	2 mg.
Riboflavin (B_2)	2 mg.
Nicotinamide	20 mg.
Pyridoxine Hydrochloride	0.5 mg.
Vitamin B_{12} (as cobalamin concentrate)	2 mcg.
Calcium Pantothenate	5 mg.
Ascorbic Acid (C)	50 mg.
Iron (as sulfate)	10 mg.
Copper (as sulfate)	0.15 mg.
Iodine (as calcium iodate)	0.1 mg.
Manganese (as sulfate)	0.05 mg.
Magnesium (as oxide)	0.15 mg.
Calcium (as phosphate)	250 mg.
Phosphorus (as calcium phosphate)	193 mg.

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New!—A Manual and Atlas for the General Surgeon

Marble—The Hand

This unusual book is aimed at the needs of the general practitioner, general surgeon and industrial physician—the men who see hand injuries first. Full page plates and explicit text give you quick instructions on treating every type of hand injury you are likely to see—from *lacerations* and *puncture wounds* to *fractures* and *crushing injuries.*

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By HENRY C. MARBLE, M.D., F.A.C.S., Consulting Surgeon to the Massachusetts General Hospital. 207 pages, 6½"x9¾", illustrated. $7.00. *Ready January!*

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Here is sound advice on how to apply hypnosis safely and effectively in your everyday practice. Dr. Meares gives step-by-step instructions for each method of induction: by direct stare; by suggestions for relaxation; by arm levitation; etc. He gives practical help on choosing the right method of induction for a particular case.

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With the aid of 69 authorities, the editors have compiled a complete text on the pitfalls of surgery—from preoperative preparation through post-operative convalescence. The authors cover general complications that may occur in almost any type of surgery, such as infections, wound dehiscence, shock, transfusion reactions, etc. Next, the management of special problems of severe pain, anesthetic complications, nutritional problems and emotional crises is clearly described. More than half of the book is devoted to the specific complications that arise in particular surgical operations.

Comprehensive chapters detail complications of: *antibiotic therapy—radiation therapy—pulmonary resection—splenectomy—appendectomy—pediatric surgery—hernia repair—surgery of the breast—common fractures—burns—etc.*

Edited by CURTIS P. ARTZ, M.D., F.A.C.S., Associate Professor of Surgery; and JAMES D. HARDY, M.D., F.A.C.S., Professor and Chairman of the Department of Surgery, University of Mississippi. With Contributions by 69 other Authorities. 1075 pages, 7"x10", with 271 illustrations. $23.00. *New!*

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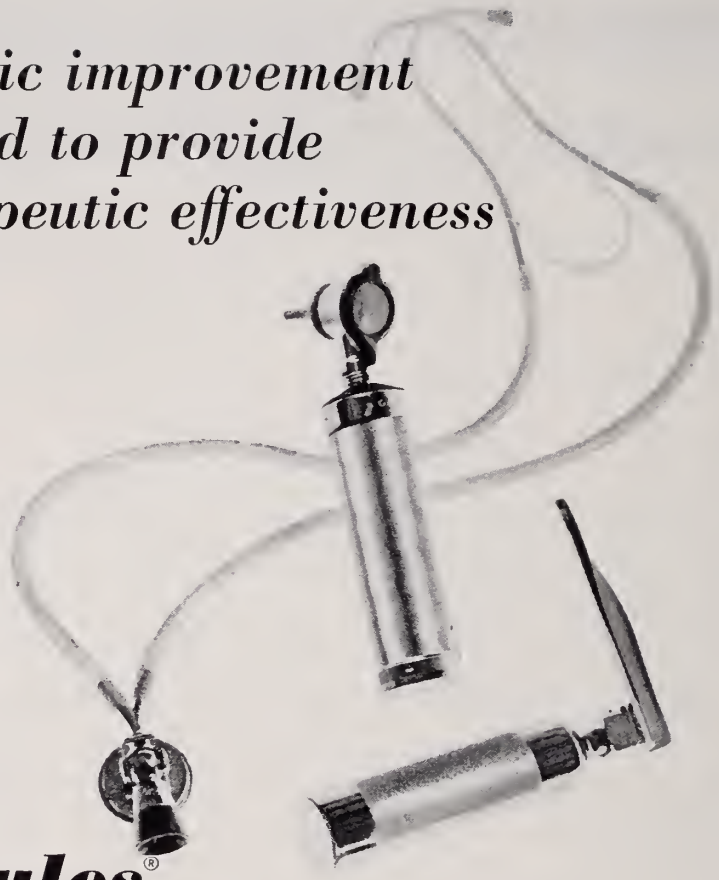
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now Pulvules® Ilosone®

(propionyl erythromycin ester lauryl sulfate, Lilly)

in a more acid-stable form assure adequate absorption even when taken with food

Ilosone retains 97.3 percent of its antibacterial activity after exposure to gastric juice (*p*H 1.1) for forty minutes.[1] This means there is more antibiotic available for absorption—greater therapeutic activity. Clinically, too, Ilosone has been shown[2,3] to be decisively effective in a wide variety of bacterial infections—with a reassuring record of safety.[4]

Usual dosage for adults and for children over fifty pounds is 250 mg. every six hours.
Supplied in 125 and 250-mg. Pulvules and in suspension and drops.

1. Stephens, V. C., *et al.:* J. Am. Pharm. A. (Scient. Ed.), *48*:620, 1959.
2. Salitsky, S., *et al.:* Antibiotics Annual, p. 893, 1959-1960.
3. Reichelderfer, T. E., *et al.:* Antibiotics Annual, p. 899, 1959-1960.
4. Kuder, H. V.: Clin. Pharmacol. & Therap., in press.

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1430 Tulane Avenue, New Orleans 12, La.

Evaluation of Work Potential in the Rehabilitation of the Cardiac*

• To put the cardiac patient back to work not only must his great emotional stress be overcome, but the functional capacity of his heart, his general physical status, and the energy costs of his job must all be considered.

THEODORE V. PARRAN, M. D.
Cleveland, Ohio

IN recent years much has been written about rehabilitation of the cardiac. Work Classification Units have come into vogue and no fewer than 70 have been established. Fifty-four of these are currently functioning. The need for a multidisciplinary team approach to the job adjustment problems of the cardiac has been stressed by many authorities. Industry has been urged to hire and rehire the cardiac.

Studies have been advanced to prove that cardiacs can work without hazard to themselves or fellow workers, without inordinate absenteeism, and with great skill, loyalty and responsibility if placed on appropriate jobs. In several states legislation has been enacted to protect an enlightened employer from being penalized insurance-wise for hiring the known cardiac. Elaborate research projects in work physiology have delved into the effect of the physical and emotional stress of the job on the heart. Cardiac in industry conferences, the First Wisconsin Conference on Work and the Heart, and other similarly oriented meetings have wrestled with the many complex factors that affect the rehabilitation of the cardiac.

Rehabilitation Interval

Is this problem really so complex? Is a team evaluation necessary before a man can be advised about appropriate work? If this evaluation is really difficult, what makes it difficult?

For the practicing physician this whole area may well have taken on an aura of mystery. Like the surgeon's concept of the use of digitalis, there may seem to be something magical about getting the cardiac back to work. Actually, Work Classification Units do nothing that the private physician cannot do. Indeed, the work adjustment problems of 80 per cent of heart patients can easily be handled by the private physician. Using the tools of a good history and physical examination, an awareness of the job requirements based on the patient's description, and an understanding of some of the emotional and social stresses influencing the patient's

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adaptive ability, the doctor himself can make work recommendations.

Rehabilitation has been defined as that phase of an illness during the interval from bed to job. For the amputee, the arthritic, the paraplegic, rehabilitation is an interval of hard, often painful, physical work. For the cardiac, however, it is an interval of great emotional stress, with gradual progressive physical conditioning taken in easy stages. He is constantly testing himself, each test made difficult chiefly by apprehension. Fear of sudden death, fear of symptoms, fear of being considered handicapped—fear is constantly with the heart patient during the rehabilitation interval. This anxiety, which invariably accompanies a severe cardiac episode, whether it be a myocardial infarction, acute pulmonary edema, dreaded dropsy, or a hypertensive crisis, this anxiety is hard for the patient to cope with and hard for the doctor to cope with. It is dispelled not so much by verbal reassurance or soporifics, as by the ability to resume familiar activities without dire consequences. Yet anxiety usually prevents the patient from resuming these activities spontaneously. He looks to the physician for guidance.

Activities must be prescribed by the physician just as drugs are. The prescription must be intelligently formulated and modified periodically to keep pace with the patient's progress. Close medical follow-up is required to enable the physician to be familiar with the patient's symptoms, his pain threshold, his reaction patterns, his emotional structure, and his anxieties. With such knowledge as a basis it is not difficult to work out a program of graded activities which will improve physical and mental fitness to a degree compatible with return to work without overly taxing the capacity of the individual. At this point the physician must write the last of a series of activities prescriptions. Too often it reads simply, "light work only". To an industrial physician such a phrase means little. To a personnel manager it means nothing. To the patient it often means no job.

How can the work prescription be written to produce a better result? What factors should be considered when making practical work recommendations?

Functional Capacity of Heart

The first step is to evaluate the functional capacity of the patient's heart. Functional capacity is an estimate of what the patient's heart will allow him to do.[1] It is derived largely from information given by the patient regarding symptoms. An effort is made to quantitate the degree of stress required to produce symptoms. How many steps can be climbed? How many blocks walked? Are symptoms consistently related to specific efforts, or is this relationship variable? How fast a pace can be maintained? How do cold exposure, emotional stress, or a heavy meal influence the symptom threshold? Are symptoms definitely cardiac, or are they nonspecific, related more likely to neurasthenia, poor conditioning, anxiety, or diseases of other organ systems?

On the basis of the answers to such questions an accurate assessment of functional capacity may usually be made. Physical examination may sometimes detect inconsistencies between symptoms and objective findings, and may call attention to the need for further evaluation. Bruce has shown that such discrepencies usually occur in instances where poor motivation or disabling emotional symptoms are the major handicap.[2]

Master's Test

No single objective test has been devised to give an accurate measure of a patient's functional capacity. The treadmill, the bicycle ergometer,[3] and the Master two-step test[4]— all have in common the essential feature of using a sufficiently large muscle mass (i.e., leg musculature) that local fatigue will not limit the testing of the cardiorespiratory system. Treadmills and bicycle ergometers are not readily available to the practicing physician, however, and must be considered research tools. The equipment for the standard two-step test is simple and inexpensive, yet even this is unnecessary.

An available flight of stairs will serve equally well. By standardizing the number of steps climbed and descended per unit time, based upon age, sex, and weight, one may express the working energy cost of the step test in calories per minute, a useful unit of measure. Basal energy requirements usually average about one calorie per minute. The energy cost of any activity may then be expressed roughly as a multiple of unity, thus providing an easy means for comparison.[5] The Master test has been shown to require 8 to 8.5 calories per minute.[6] This is a level of work unmatched in activities of daily living and rarely equalled in the factory, steel mill, or foundry. It is a peak energy fitness test of limited duration, and yet safe for most cardiacs whose disease process is stable.

Measurement of heart rate, blood pressure, and the electrocardiographic pattern are made before and after this standard exercise. An excessively rapid heart rate, failure to increase systolic blood pressure, appearance of significant symptoms, (i.e., angina, severe dyspnea, or dizziness), or electrocardiographic changes as described by Master—any one of these is interpreted as an abnormal response. Such unfitness, however, is not necessarily cardiac unfitness. In addition to coronary insufficiency, failure of the cardio-respiratory mechanism to tolerate such stress may be due to inadequate physical conditioning, primary or secondary lung disease, anemia, metabolic or endocrine imbalance, diffuse myocardial fibrosis, myositis, valvular heart disease, hypomotivation or emotional factors.

The test is useful though for routine use even with its limitations for the following reasons: (1) It requires little equipment, (2) Its energy cost has been shown not to be extreme, safe for most cardiacs, (3) This energy cost, expressed in calories per minute serves as a useful comparison with daily activities whose energy cost is similarly expressed.[4] Some prognostic significance can be attached to the response to such standard exercise. (I will amplify this shortly.) (5) Reassurance. Many heart patients who have been unwilling to test themselves in their daily routine derive enormous reassurance value from the demonstration that they can perform such exertion without undue symptoms. (6) An occasional patient will manifest significant electrocardiographic changes without experiencing symptoms of any kind. Such a hyporeactor must be cautioned not to use symptom threshold as a safety threshold. He must arbitrarily limit his activities to those which do not provoke the electrocardiographic changes.

Contraindications to Master's Test

At the Work Classification Clinic of the Cleveland Area Heart Society, 75 per cent of all patients with heart disease have been so exercised. The remainder were not subjected to the test because of such contraindications as recent myocardial infarction (less than three months old); obvious incapacity, such as resting angina or marked decompensation; the control electrocardiogram revealed changes suggestive of recent infarct, or of coronary insufficiency at rest; or symptoms were present suggestive of impending infarction. A six to seven year follow-up has shown the death rate to be 55.7 per cent in those not exercised due to contraindication, 46.3 per cent in those found unfit by the test, and 23.8 per cent in those whose response to exercise was normal. No instance of death or other dire consequences has been observed by us to follow such effort.

One of the prime limitations of such a test is the well recognized fact that it tests only a peak effort. It gives no information about endurance, about response to static work, about the added insult of heat stress or cold exposure. This information, however, can usually be obtained from the history.

Functional Capacity of Individual

After the physician has established by history, physical examination, and possibly an exercise test the functional capacity of the heart, he must then evaluate the functional capacity of the individual.

The influence of associated diseases must be estimated. It is well known that the presence of multiple handicaps has a profound effect upon success or failure of a rehabilitation program. Emotional problems, obesity, pulmonary disease, arthritis, "shoulder-hand" syndrome, peptic ulcer disease, diabetes; any of these when associated with heart disease will complicate the job of getting the patient back to work.

The influence of emotions has been shown to play a primary role in the degree of disability of a cardiac. Emotional stress may simulate or aggravate the effect of exercise on the heart. Just as work done in a hot or cold environment, or after a heavy meal, requires more energy than if done under more favorable conditions, in the same way emotional stress adds to the burden on the heart. In addition to the direct effect of emotional stress as an added burden on the heart, fear and anxiety alone may render a cardiac incapable of returning to productive work. It has been shown that 40 to 50 per cent of those who are unable to adjust to a work situation are prevented from doing so more by emotional factors than by reduced cardiac function.[7] The emotional adjustment which an individual makes to his illness is determined by many factors, the pre-illness personality, the degree of understanding of the nature of the illness, the type of symptoms and their severity, and the attitude of relatives, friends, and the physician toward the illness (overly protective, overly sympathetic, or demanding).

Goldwater has stated, "Reassurance, explanation of the part played by anxiety in the causation of symptoms, and the type of psychotherapy which an understanding family doctor can give will frequently alleviate symptoms and be the first step toward returning the cardiac to work."[8]

The hope of getting a patient back to work drops sharply if he is off work for more than three months. Therefore, if this type of reassurance on the supportive level does not serve to relieve the patient of paralyzing emotional symptoms, the physician should not hesitate to refer the patient for formal psychiatric help. Some susceptible persons will manifest at this time evidence of severe psychotic depression which should be treated promptly. Others, whose emotional reaction may not be quite so severe, but who are allowed to go month after month without psychiatric consultation or therapy in the hope that time will take care of the trouble, will miss irretrievable employment opportunities, and may never work again.

Energy Costs of Work Activities

Let us turn now to the problems which face the physician as he evaluates the requirements of the patient's job. At this point he will do well to remember that the patient's description of his job is just as important in job evaluation as is his description of his symptoms in the evaluation of the functional capacity of the heart.

An occupational history should include, name and address of employers, kinds of jobs held, hours worked, salary or hourly rate, information about educational background and vocational or avocational skills. In addition the physician should obtain a detailed description of the usual job with information about commuting time, distance from parking lot to work area, and the nature of the work environment. Relationship to co-workers and supervisors, the presence of stressful aspects of the job (such as production pace), job alternatives, and the possibility of job modification — all contribute to a better understanding of the work situation.

In considering the appropriateness of a job, the physician must think in terms of the energy costs of work activities. (Table 1).

It has been estimated that continuous work over an eight hour interval which requires more than an average of five calories per minute cannot be maintained by the average healthy man.[9] This average energy cost is therefore the limit which might be considered safe for the Class I cardiac. For Class II, up to 4.0 calories per minute, Class III up to 2.7 calories and Class IV no more than 1.5 calories per

TABLE 1
MAXIMUM ENERGY COSTS

Activities	Cal./Min.
Watch repairing	1.6
Armature winding	2.2
Radio assembly	2.7
Bricklaying	4.0
Plastering	4.1
Wheeling wheel barrow (115 pounds at 2.5 mph)	5.0
Carpentry	6.8
Hand mowing	7.3
Felling a tree	8.0
Shoveling	8.5
Climbing stairs (17 pounds at 27 ft./min.)	9.0
Tending furnace	10.2

minute. Remembering that these are average values, and that work efforts involve peaks and valleys of energy output, the physician must also place some limitation on maximum unsustained effort, heat and cold stress, working pace, and exposure to toxic substances.

Ford and Hellerstein[10] have measured the energy requirements of representative factory jobs. They have gone so far as to measure the energy cost of the jobs as performed by cardiacs and non-cardiacs and, "no statistically significant difference in either average or maximum rate of energy expenditure could be demonstrated when the cardiacs were compared with healthy men performing the same job." In other words, not only was the job no harder on the cardiac, but also the cardiac did not cut corners in the performance of it. Most jobs studied required low rates of energy expenditure, well within the capacity of the Class I, II, or III cardiac.

Extending their studies to include jobs in heavy industry, Hellerstein and Ford have found certain jobs in the Jones and Laughlin Steel Mill in Cleveland which are not appropriate for cardiacs.[11] Here the limiting factor is not average energy expenditure, but rather excessive unsustained effort or severe heat stress. The average energy cost for the work shift even for the truly heavy jobs did not exceed the theoretical maximum of 5 calories per minute.

Work Recommendations

After a detailed inquiry into the patient's job situation has been made, the problem arises as to how to outline usable work recommendations for the patient. There seems to be some inherent lack of communication between doctors and personnel men. Several factors undoubtedly contribute to this failure of communication, such as language barrier, lack of understanding by each of the other's problems, unwillingness of a lay person to make a decision involving a heart patient unless specifically authorized medically, and often union-management pressures which are frequently antagonistic. There exists no standardized communication medium which is adaptable to all disabilities, or indeed to all individuals. Hanman has proposed the use of a Profile of Physical Activities.[12] This activities list is not very appropriate for cardiacs because it requires precise definition of abilities and limitations which usually are too variable to be so defined. The physician is asked to express in terms of hours or fractions of hours exactly how long the patient may engage in every conceivable work activity. His quandary is like that of the medical student taking the national board examinations. He is asked to choose the most correct of five answers, none of which seem to have any relationship to the question. The obvious hazard is for the personnel man using this Profile to establish a rigid framework of work restrictions based only on the educated guess of the physician. The result is apt to be failure to use the abilities and skills of a cardiac worker because of a technical stumbling block. Yet this is the very result which Hanman seeks to avoid. Certainly the plea of Hanman to be as specific as possible in making work recommendations I must heartily endorse. The work prescription should be a positive statement of abilities rather than merely a list of disabilities.

Most often the cardiac with a skill can return to his former job with his former employer. In some instances his job may require slight modification, such as the use of a hand truck to transport parts or

tools to a work area, or from tool crib to machine. In general, skilled jobs do not demand work which is unsafe for cardiacs.

Most semiskilled jobs too are appropriate. Again some simple job modification usually will eliminate taxing features. The operator of a semi-automatic machine may need to have a co-worker wield a sledge hammer to loosen a chuck for changing a set-up, but the other job requirements will usually be quite reasonable. Job re-assignment as from a large punch press to a small one, from a drill press which requires the operator to stand to one which may be operated seated, from inspection of 50 pound castings to inspection of 25 pound castings,— such re - assignments sometimes can be effected without loss of pay or "job prestige."

The unskilled worker, however, presents a more difficult and challenging problem. A material handler, construction laborer, track or field hand, or stevedore who develops heart disease rarely can continue doing such hard work. Lack of education, lack of skills, lack of intelligence, usually are factors which prevent an easy transition to less strenuous work. Returning such a man to gainful employment often requires the cooperative efforts of several community or state agencies. Careful vocational evaluation and counselling, the thoughtful attention of employment or placement personnel, and occasionally the expenditure of effort and money by the State Bureau of Vocational Rehabilitation may be required before satisfactory work rehabilitation may be effected. The physician must be aware of such community resources in order to utilize them when needed. The local heart society will have a list of various agencies, a description of their function, and eligibility requirements and methods of referral. In areas where Work Classification Units are functioning, such problem cardiacs are best handled by the Unit to expedite referral to the appropriate rehabilitation agency.

Just a word about the small group of heart patients who are too limited to work. There is no question that some cardiacs are truly unemployable, and it is foolhardy to urge them to perform beyond their capacity. There is a close relationship between functional capacity and survival. To ignore the fact that only half of Class III cardiacs are alive after four years is unfair to the patient, his family and his employer. Inability to compete for wages in industry does not mean that a patient must resign himself to a life of frustrating idleness. Diversional sheltered workshop activities, if available, part time volunteer interests, hobbies, or a reasonable travel program may serve as a substitute for gainful employment.

To review, then, the factors which may have a bearing on the employability of the cardiac, we see that such patients are just as heterogeneous as are people without heart disease. They have their individual differences in intelligence, interests, education and training, skills, language, and work habits. Their personalities are just as diversified.

The job factors which will influence employability involve not only the physical and emotional demands of the job but also the flexibility of it. Availability of alternate jobs of similar pay rate and status, the condition of the job market in the community, and the nature of the pre-employment examination, all may play a role in fitting the job to the man.

The physical status such as age, diagnosis, prognosis, expected results of therapy, and physical fitness, needs no further comment.

Miscellaneous factors include minority group membership, financial need, transportation time and strain, availability of community resources for placement and counselling, and the energy requirements of activities off the job.

It has not been my intent to overwhelm you with the complexity of the data which needs digesting before practical work recommendations can be made for the patient. Much of this information is known by the physician from the start simply because he knows the patient. The rest can be easily collected at the appropriate time if a little time is taken to talk with

the patient about his job. Everyone likes to talk about his work. The heart patient is no exception. Some, you will find, will talk too much. Like the neurotic female who in the course of the medical history becomes fixed in the Systems Review, an occasional patient with heart disease will give a confusing job description. With a little practice the physician should have no trouble in sorting out the pertinent information. If necessary, a detailed job description may be obtained from the employer to confirm or amplify the patient's description.

Success or failure in the rehabilitation of his patient may well hinge on the doctor's work prescription. With first hand knowledge of the patient, his disease, his emotional reaction to the disease, his physical limitations and abilities, his job and its significance, the physician is in a position to make sound work recommendations. Possessing this knowledge let us hope that he does not crystallize all of it into the pronouncement, beautiful in its simplicity but deadly in its impact, "light work only."

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On the Treatment of Chronic Dysentery

The castor oil treatment may be advantageously employed in all stages of the disease—either at an early period when the disease is subacute and the ulceration still extending, or when the process of repair is going on, and we are dealing merely with the ulcerated condition of the bowel, or when the ulcers have healed, and there remains a thickened and contracted condition of bowel, caused by cicatrization, with a mucous surface extremely liable to catarrh. It is apparently beneficial by causing a soft nonirritating flux from the small intestines which sweeps before it scybalae, decomposing shreds of mucous membrane, or food, and offensive discharges accumulated in the lower bowel. With respect to the dose, in twenty-one cases two drachms of the oil were administered every alternate night. Of these six were discharged cured. * * * When castor oil alone was relied on, the results were not so satisfactory as when either a mixture of bismuth or hematoxylon was given at the same time, or at some period during treatment.—*Dr. Ralfe in London Lancet—Western Lancet, June 1880.*

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An Evaluation of Hydrochlorothiazide And Syrosingopine Therapy*

• A study of the effects of two new drugs on 72 patients over a period of 28 weeks, in the Hypertension Clinic at Charity Hospital of Louisiana, New Orleans.

WALTER BORTZ, M. D.
EDWIN WALKER, M. D.
JOHN SIGNORELLI, M. D.
HOMER J. DUPUY, M. D.
New Orleans

THE place of chlorothiazide and reserpine in the log of successful anti-hypertensive agents is secure. This study was done to determine the efficacy of two of the second generation synthetic analogs—hydrochlorothiazide and syrosingopine.†

Methods and Materials

Seventy-two patients, of whom 69 were Negro and 3 Caucasian, were observed over a period of twenty-eight weeks. The effectiveness of one, hydrochlorothiazide, was noted over a ten-week period when used alone. The remainder of the period of observation was with combination therapy. The patients were part of a group that had been followed for the past few years in the Hypertension Clinic at Charity Hospital of Louisiana in New Orleans. It is important to note that these patients were a hypertensive group who had shown no remarkable response with other potent anti-hypertensive agents in the past. All therapy had been discontinued for at least two weeks before beginning treatment with the two drugs under discussion. No overt effort was made at salt restriction. The dosage of drugs used is seen in Table 3.

The drug was regarded as having produced a response if a systolic fall of 20 mm. of mercury or a fall of 15 mm. diastolic was noted.

Table 1 illustrates the type of patient included in this study. Blood pressures were recorded in the sitting position after the patient had been resting for at least one half hour. Revisits were at two-week intervals, at which time observations of the blood pressure, eyegrounds, weight, presence or absence of edema, and side effects were made. Appropriate laboratory tests, including electrolytes, were performed in the control period, after the ten week period on hydrochlorothiazide, and again at the end of the twenty-eight week period.

TABLE 1

Total	Age	Pre-treatment B.P. levels
72 patients	27-40 years - 22 pts.	8 pts. - 170/100
14 male	41-50 years - 29 pts.	30 pts. - 170-220/100-120
58 female	50-64 years - 21 pts.	34 pts. - 225/125 or higher

Table 2 summarizes the significant abnormalities noted in this group of patients clinically and with pre-treatment laboratory studies. Eight subjects exhibited a trace to +1 pedal edema which disappeared by the second visit on hydro-

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From the Hypertension Clinic, Charity Hospital of Louisiana at New Orleans, and the Department of Medicine, Louisiana State University School of Medicine.

† Drugs were kindly supplied by Ciba Pharmaceutical Products, Inc. as Esidrex® and Singoserp®.

TABLE 2

Known duration of hypertension	4 yrs. or less (23 pts.)	5-9 yrs. (23 pts.)	10 yrs. or over (26 pts.)
Previous therapy	None (1 pt.)	Pb only (8 pts.)	Other Rx including ganglionic blocker (63 pts.)
Edema	Present (8 pts.)		
Retinopathy	Grade III (4 pts.)	Grade II (37 pts.)	Grade I (16 pts.) None (15 pts.)
ECG	52 abnormal	20 within normal limits	
Cardiomegaly	34 positive	38 negative	
BUN	10 abnormal	62 normal	
Anemia	5 positive	67 normal	
Albuminuria & casts	21 positive	51 negative	
Sodium & Potassium	72 normal		

chlorothiazide therapy alone. Forty-nine had electrocardiographic evidence of left ventricular hypertrophy: three had ischemic patterns. Ten patients had blood urea nitrogen values in excess of 20 mgm%. Five patients had hemoglobin values of less than 10 grams.

Results

Table 3 gives some of the laboratory data that is pertinent. In none was a significant potassium fall evident, although it must be remembered that the second observation was made only after the hydrochlorothiazide had been in use for ten weeks.

Twenty patients had complaints which were attributed to only one of the drugs—hydrochlorothiazide. These were minor in nature and consisted of non-specific weakness, lightheadness, and in some instances paresthesia. This necessitated a temporary reduction in dosage in a very few; however, we were later able to increase to full dosage levels in all of these patients. One patient had a transient rash. Nearly all side effects were noticeable most prominently in the first week of hydrochlorothiazide alone. One patient had had no blood pressure response and terminated in uremia. Another patient died from a subarachnoid hemorrhage showing no significent blood pressure change.

TABLE 3

Results	Hydrochlorothiazide	Hydrochlorothiazide and Syrosingopine
Number of patients	61	43
Dosage	50 mgm. b.i.d.	50 mgm. hydrochlorothiazide b.i.d. 1 or 2 mgm. syrosingopine daily
Duration	10 weeks	6-18 weeks
Side effects	20 patients	None
Deaths	2 {uremia, subarachnoid hemorrhage}	None
Eye ground changes	None	None
ECG changes	5 improved	5 improved
Cardiomegaly (X-ray)	9 improved	2 improved
BUN Change	2 slight increase 1 died in uremia	
Sodium & Potassium	No change	No change
Blood Count	No change	No change
Urinalysis	No change	No change
Weight reduction	No significant change (Loss of edema in 8 pts. who exhibited it initially)	

Table 4 provides the blood pressure response figures. Eleven patients could not be included in evaluation of response to therapy because of failure to report

TABLE 4

	No. Patients
Hydrochlorothiazide	61
Response	32
No response	29
Hydrochlorothiazide and Syrosingopine	43
Response	28
No response	15

back for follow-up to the clinic. Thirty-two of the 61 who were maintained on hydrochlorothiazide for ten weeks had a satisfactory fall at this period. Six others who had responded initially failed to maintain this fall, whereas 13 who appeared initially resistant had a later reduction.

Forty-three patients received syrosingopine in one milligram additions. Twenty of these had a further ten millimeter fall in systolic and or diastolic levels over the hydrochlorothiazide alone. These reactors occurred equally in those responsive to hydrochlorothiazide and those not. On the addition of another milligram of syrosingopine, in six weeks, 8 others showed a similar fall. Thus, 28 of the 43 patients on both agents responded better to the combined drugs than to the hydrochlorothiazide alone.

Conclusions

Hydrochlorothiazide was shown to have a significant blood pressure lowering effect in 32 of the 61 patients treated for ten weeks with this agent. Addition of syrosingopine provided an additional fall in twenty-eight of forty-three so treated.

Thus, both drugs appear to be effective antihypertensive agents, relatively free of side effect. Hydrochlorothiazide and syrosingopine used in combination have been more effective than any other agents we have used in our hypertension clinic during a twelve year study of hypotensive drugs in the treatment of essential hypertension. Further study may be required to determine the more sustained effect of these drugs.

Yellow Fever In New Orleans

The presence of one case of this dreaded disease has caused a degree of anxiety throughout the country, which may culminate in rigid quarantines, in spite of the precautions taken to prevent an outbreak of the fever. The State Board and National Board of Health will remain untiring in their best endeavors in the cause of sanitation, and inspectors of freight permit nothing infected to leave the city by rail or river. Bills of lading are closely scrutinized and articles of a suspicious nature are removed. Precautions are taken with passengers and certificates are issued when the inspector is convinced that there is no danger of their being carriers of the infection.

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Toxic Reaction to Phenindione

• An illustrative case report is given and a general discussion of the toxic reactions of the drug.

JOHN W. DEMING, M. D.
Alexandria

THE anticoagulants have been used extensively in the treatment and the prevention of thrombosis, particularly coronary thrombosis. Their value has been proved beyond doubt in a number of series published. However, along with their beneficial effect there have been a number of instances of toxic effects. The most common of these has been serious bleeding secondary to excessive dosages. In addition, there have been repeated reports of some depression of the bone marrow with agranulocytosis or thrombocytopenia. The overall instance of toxic reactions has been low and has not been considered any contraindication when the anticoagulants are indicated. The folowing case demonstrates a sensitivity or allergic reaction to the use of Phenindione (Danilone).

Case Report

This sixty-three year old, white female was in good health until April, 1954. At that time she was admitted to the hospital due to severe, tight, squeezing, substernal pain which awakened her at night and required a narcotic for relief. The patient stated that for the past several months she would develop tightness in her chest on strenuous exercise, such as climbing hills. Review of symptoms at this time was essentially negative. The patient did not smoke and there was no family history of cardiovascular disease.

Physical examination revealed a blood pressure of 110/60. The remainder of the physical examination was essentially negative. There were no cardiac murmurs and the heart was not enlarged. The rate was slow but regular. The electrocardiogram showed an acute posterior wall infarction with a sinus brachycardia, which was present throughout her hospitalization.

Her white blood count was 7,700 on admission with 79 segs, 9 stabs, and 12 lymphs. For the first four or five days of hospitalization she ran a low grade fever. Her sed rate became elevated soon after her admission to the hospital and remained elevated throughout her period of hospitalization, but was returning to normal at the end of her hospitalization.

This patient was treated over a period of five and a half weeks in the hospital with the usual regime for myocardial infarction, including bed rest, sedation, oxygen as needed, and Phenindione (Danilone). She responded very nicely and was discharged on May 27, 1954.

After discharge the patient got along satisfactorily at home. She gradually increased her activities over the next several months. The patient still continued to have some substernal discomfort especially at night and during the day on exertion. This pain required sedation, Peritrate, and an occasional Nitroglycerine for relief. EPA of the chest in January, 1955 showed moderate cardiac enlargement and essentially normal lung fields.

In February, 1955, the patient began to complain of aching in both shoulders and arms especially when she moved them. Over the next two or three months she developed a rather severe shoulder-hand syndrome, particularly on the left side. This gradually responded to treatment with physiotherapy, heat, and an occasional course of Meticorten. By early fall of 1955 she was completely free of any shoulder-hand pain but still had tightness in her chest which required Nitroglycerine and she continued to take sedatives, either Phenobarbital or Nembutal. She continued in about the same condition up until November, 1956.

At that time she complained of some rectal pain with increased constipation. Also, she complained of some discomfort in her epigastrium which seemed to be related to meals and increased amounts of gas. She was referred to the hospital in November, 1956, for evaluation of her G.I. tract complaints. At that time her hemoglobin was 13.2 grams or 85 per cent. Her hematocrit was 41 per cent and her white blood count was 7800 with a normal differential. Her sed rate was 12 millimeters.

Proctoscopic examination revealed no strictures or masses and an essentially normal mucosa. Anal papilli were prominent and there was moderate cryptitis in the anal canal. Also, there were some external hemorrhoids. A stool specimen was obtained at proctoscopic examination for microscopic study for ova, parasites, and amoeba and was reported as negative.

Barium enema examination revealed moderate diverticulosis of the left colon. Upper G.I. tract

and gall bladder visualization were negative.

After discharge in November, 1956, the patient seemed to have some increase in her angina pains over the next several months, particularly at night and required an increased amount of Nitroglycerine. Due to this increase in severity of angina, she was hospitalized in January, 1957, for the purpose of starting her on anticoagulant therapy (Phenindione). In the hospital, she was regulated satisfactorily on Phenindione, 50 milligrams daily. This gave her an effective lowering of her prothrombin activity to 20 to 40 per cent range. While in the hospital she complained of some mild gastroenteritis a day or two before the Phenindione was started and continued to have a mild diarrhea throughout her hospitalization.

After discharge she was continued on Phenindione and her diarrhea continued. She averaged between four to eight bowel movements a day. The diarrhea remained the same until the middle of April. At that time she had lost about six or seven pounds since the onset of the diarrhea and complained considerably of weakness. The diarrhea failed to respond to treatment with a low residue diet, Kaomagna, Kaopectate and Paregoric, Probanthine and Phenobarbital, and antibacterial drugs, such as Gantrisin and Sulfaguanidine. These medicines were given intermittently over a period from February to the middle of April. Stool examinations done at this time for ova, parasites, and cysts were negative and a blood count revealed a hemoglobin of 95.8 per cent with a hematocrit of 42 per cent. The white blood count was 6500 with a normal differential.

Finally, due to the inability to control her diarrhea she was seen in consultation by another internist in the city. After a careful review of her history and physical findings he suggested the possibility that her diarrhea might be due to Phenindione sensitivity. This was not considered earlier because actually her gastroenteritis that precipitated the diarrhea appeared to have developed a day or two before the Phenindione was started. At his suggestion the Phenindione was discontinued, and after a week's time the diarrhea completely subsided. After she had been free of diarrhea for another week it was decided that Phenindione should be restarted as a further test of the possibility of its being the cause of the diarrhea. The Phenindione was started and the signs and symptoms of diarrhea recurred after four or five days of the drug. It was discontinued again and the diarrhea cleared up. This seemed to clearly implicate Phenindione as a cause of the diarrhea.

Since it was felt that the patient needed anticoagulant therapy, she was readmitted to the hospital in June, 1957, for the purpose of starting her on another anti-coagulant. At that time she was started on Warfarin with no difficulty and no signs of any gastrointestinal upset. After discharge she was maintained on Warfarin without any episode of bleeding and with effective control of her prothrombin activity.

In spite of anti-coagulant therapy the patient continued to have attacks of substernal discomfort during the day and at night. However, they definitely seemed to be improved by the anticoagulants. She continued to have to take Nitroglycerine from time to time and use sedatives during the day and at night.

In December, 1957, the patient was put on a diet that was low in animal fats and relatively high in unsaturated fatty acids, such as corn oil. Her cholesterol level at the time of beginning of the unsaturated fatty acid diet and low animal fat diet was 410 milligrams per cent. The cholesterol was down to 328 milligrams per cent on the 19th of March, 1958, and she seemed to tolerate the diet very satisfactorily.

In October, 1958, due to the slight to moderate cardiac enlargement and continued chest pain, the patient was digitalized without any significant benefit.

The patient continued to get along fairly well until November 21, 1958. At that time about 11:30 at night she developed weakness, sweatiness, and noticed a rather marked cardiac irregularity. She had some substernal discomfort but no real pain. The patient was hospitalied and put under oxygen and given sedation. Electrocardiogram showed fast auricular fibrillation. She was given some Cedilanid for this and it seemed to be controlling it, however, she died suddenly at 1:30 A.M. on the 22nd of November, 1958.

Discussion

Reactions to Phenindione therapy are quite rare as indicated by the paucity of reactions in the series reported by Sise[6] et al. Bleeding was the only toxic reaction noted and seemed to bear more relationship to the severity of the patient's illness and local conditions than it did to the prothrombin time. Blaustein[5] et al reported 400 cases with only 3 cases of hemorrhage. Only one of the 3 was serious and this because of its association with polycystic kidney disease. Blaustein also mentions diarrhea in 1 case but does not describe it in any way. In neither of these series is length of Phenindione therapy indicated. Most case reports of toxic or allergic reactions indicate that these reactions usually occur after the second or third week[10] of therapy. The low incidence of reactions

in the above two series may be due to the relatively short periods of time during which the drug was given.

Excluding hemorrhage, which is due to overdosage, the most common toxic reactions reported are agranulocytosis, fever, rash, hepatitis, renal changes, anemia, and leukemoid reactions.[1-4, 7, 8] These reactions appear to be on the basis of drug sensitivity. Since sensitivity to the drug can be severe, immediate withdrawal of the drug is indicated at the first sign of reaction. The outlook in agranulocytosis appears to be good especially when numerous myelocytes are found in the marrow. Most cases have been treated with one of the steriod drugs plus antibiotics to control infection. In regard to liver injury, I found no reports indicating permanent damage.

This patient developed a diarrhea soon after the onset of Phenindione therapy. She had previously had Phenindione for a period of six weeks, in 1953, without any evidence of toxicity. The early onset of diarrhea in this case is probably due to acquiring of sensitivity during the previous course of therapy. There was no other satisfactory explanation for her diarrhea. The diverticula of the colon had been present for quite a number of years and on barium enema showed no evidence of inflammation. She had suffered from constipation in the past and used a mild laxative from time to time. The stool examinations were negative for intestinal parasites during the diarrhea. The diarrhea stopped in three to four days after discontinuing the Phenindione and on restarting the Phenindione the diarrhea promptly returned. I believe this establishes a definite causal relationship between the diarrhea and Phenindione.

Intractable diarrhea as a toxic manifestation of Phenindione must be rare. Blaustein[5] mentions diarrhea in only one of his 200 reported cases. His lack of further comment leads me to believe it was mild and of little significance. Pastor and Tetreault[4] report a case who had a severe agranulocytosis accompanied by frequent loose brown stools. Juel-Jansen[8] reports a case of diarrhea developing about six weeks after the onset of Phenindione therapy. This was a steatorrhea and failed to respond to treatment for sprue but stopped in five to seven days after discontinuing the Phenindione. On reinstituting the Phenindione the patient developed a bloody diarrhea. His case resembles the above reported case, except no measurement was made of the fat content of my patient's stools.

In both of these cases the patients responded to discontinuance of the Phenindione and no other therapy was indicated. Since this is a sensitivity reaction, I imagine that the diarrhea would respond to steriod therapy. Both of these patients' anti-coagulant therapy could be continued without reactions by using different drugs; in the Juel-Jansen case (Tromexan) ethyl biscoumacetate, and in the above case, Warfarin.

Even though the serious reactions to Phenindione are rare, they seem to be higher than in other Coumarin type drugs. Possibly, these should be used in place of Phenindione since some of the others are equally effective.

Summary

A case of intractable diarrhea secondary to Phenindione is described. This reaction and the other toxic reactions to Phenindione are discussed.

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A Ten-Year Survey of Genitourinary Malignancies At The Huey P. Long Charity Hospital Pineville, Louisiana

• This is a report on the genitourinary malignancies which were treated at the Huey P. Long Charity Hospital between the years 1950 and 1959.

E. C. UHRICH, M. D.
Alexandria

ROBERT F. CARTER, JR., M. D.
Pineville

THE various types of malignancies which occurred during this period include carcinoma of the prostate, kidney, ureter, bladder, penis, and testis. The actual number of malignancies were taken from the pathologist's report as being evidence of a bonafide diagnosis of a malignancy.

To obtain the relative frequency in which malignant disease occurs in relation to the number of various urologic procedures performed, such as prostatectomy and nephrectomy, a compilation of the total number of procedures performed from the year 1950 through 1959 is recorded in Table 1. It can be seen from Table 1 that the majority of urologic surgery began in 1951. (Prior to 1951 there was no urologic service at the hospital).

In order that a clinical study could be undertaken, the record room obtained all charts except those which had been recorded on microfilm and were not deciphered. In order to complete the follow-up of those patients who had not been seen recently in the clinic, we dispatched a letter to each Parish Health Department concerned, requesting that the Public Health nurse visit the patient's home to ascertain whether the patient had died or was still living; and if living, if he had any particular symptoms and what his general state of health was. A total of 94 letters were sent and 80 were answered. Fourteen patients were not traceable.

Carcinoma of the Prostate

The predominant admitting complaint consisted of acute retention in 40 cases, lower urinary tract symptoms such as dysuria, frequency, nocturia, dribbling in 50 cases, and gross hematuria in 15 cases.

During this period 646 transurethral prostatectomies and 209 open prostatectomies were performed, including suprapubic, retropubic or perineal approach,

TABLE 1

Year	No. of Prostatectomies	No. of Nephrectomies	Carcinoma					
			Prostate	Kidney	Ureter	Bladder	Penis	Testes
1950	1	1	..	1	..	2	1	1
1951	78	9	10	2	..	4	3	..
1952	107	11	15	1	..	3	3	..
1953	131	20	8	4	1	10	2	..
1954	62	6	17	..	1	3	2	..
1955	73	10	8	1	..	5	1	..
1956	84	10	23	..	..	1	2	1
1957	79	8	13	..	..	9	1	..
1958	92	12	16	2	..	7	..	..
1959	142	18	14	3	..	10	1	1
Total:	855	105	124	14	2	54	16	3

making a total of 855. There were 124 cases of adenocarcinoma of the prostate, which represents 15 per cent of the prostatectomies performed. Of the 124 cases of carcinoma of the prostate, there were 50 white patients and 74 colored patients. The youngest patient was 51 years and the oldest was 91 years. The highest incidence appeared in the 61-80 year group. (See Table 2).

TABLE 2
AGE RANGE GROUPING OF PATIENTS WITH CARCINOMA OF PROSTATE

Age	Number of Patients	Per Cent
51-60	10	7
61-70	41	33
71-80	55	44
81-90	17	14
91-100	1	1
Total	124	

The radiologic findings of carcinoma of the prostate revealed osteoblastic lesions of spine, pelvis, femurs, ribs and lungs. Table 3 indicates the relative frequency of abnormal radiologic manifestations as they occurred. An abnormal chest or KUB x-ray indicates bony or pulmonary metastases. An abnormal IVP indicates hydronephrosis or a nonfunctioning kidney.

TABLE 3
RADIOLOGIC FINDINGS IN PATIENTS WITH CARCINOMA OF THE PROSTATE

X-Ray	Normal	Abnormal	Total
Chest	71 (88%)	10 (12%)	81
KUB	66 (80%)	17 (20%)	83
TUP	66 (83%)	14 (17%)	80

Acid phosphatase determinations were recorded in 69 instances. The acid phosphatase was normal in 40 patients and elevated in 29 patients (5.0 or more Bodansky units).

Of the 98 rectal prostate examinations, 62 felt malignant, which was subsequently confirmed by tissue examination; whereas the prostate felt benign in 36 when actually the pathologic diagnosis was carcinoma. (See Table 4).

Treatment of carcinoma of the prostate consisted of transurethral resection, TUR plus orchidectomy, open prostatectomy, and open prostatectomy plus orchidectomy. The most frequent methods of treatment

TABLE 4
RECTAL PROSTATE EXAMINATIONS OF PATIENTS WITH CARCINOMA OF PROSTATE

Clinical Impression	Number of Examintaions	Per Cent
Benign	36	37
Malignant	62	63
Total	98	

consisted of TUR plus orchidectomy and TUR only. Usually the decision to perform an orchidectomy hinged on the presence of bony metastasis. (See Table 5).

TABLE 5
TYPES OF SURGICAL TREATMENT OF CARCINOMA OF PROSTATE

Procedure	Number	Per Cent
TUR	38	37
TUR plus orchidectomy	55	54
Open surgery	6	4
Open surgery plus orchidectomy	3	3
Total	102	

TABLE 6
SURVIVAL TIME IN YEARS OF 100 PATIENTS WITH ADENOCARCINOMA OF THE PROSTATE

Years Lived	Number of Patients	Per Cent
0-1	34	34
1-2	27	27
2-3	14	14
3-4	10	10
4-5	4	4
Over 5	11	11

Of the 124 patients with carcinoma of the prostate, 100 medical charts were reviewed. Twenty-four charts were not available. Table 6 indicates the years survived by patients with carcinoma of the prostate. The overall five-year survival was 11 per cent. The high incidence of death in the first year is attributed to post-operative deaths and the number of patients lost to follow-up who were subsequently considered to have died.

Carcinoma of Kidney

During the ten-year period 105 nephrectomies were performed for various indications such as atrophic pyelonephritis, hydronephrosis, staghorn calculus, trauma, and renal tumors. (See Table 1).

There were 11 hypernephromas of the kidney and 3 Wilm's tumors of the kidney. There were 4 tumors in the white race and 10 in the colored race. There were 10

males and 4 females. The patients with hypernephroma ranged in age from 22 years to 74 years. All 3 Wilm's tumors occurred in patients less than 5 years of age. The last Wilm's tumor was diagnosed in 1953.

TABLE 7
AGE GROUP RANGE OF PATIENTS WITH RENAL TUMORS

Age	Number of Patients
0-5	3
21-30	1
51-60	3
61-70	4
71-80	3
Total	14

The left kidney was involved 7 times, the right 6 times and the side was not recorded in one instance.

The predominant signs and symptoms consisted of pain in the flank, abdominal mass, and gross hematuria.

The main radiologic abnormalities consisted of a mass visible on a KUB. Intravenous pyelogram abnormalities found were distortions of the collecting system, hydronephrosis, and nonfunctioning kidney. There was one patient in whom a nonfunctioning kidney was produced by blockage of the ureter by a bullet received from a gunshot one year previously. Exploration revealed a renal tumor.

Treatment consisted of nephrectomy in all cases, followed by radiation treatment of 5 cases.

Of the patients with Wilm's tumor, 2 lived six months or less, and 1 patient is still living after six years and eight months. One patient with hypernephroma lived more than five years. Two patients, who have been followed for only eighteen months, are still living. The remainder of the 10 patients have either died or have been lost to follow-up.

Carcinoma of Urinary Bladder

A total of 54 carcinomas of the urinary bladder were diagnosed. There were 47 transitional cell carcinomas, 6 squamous cell carcinomas, and 1 adenocarcinoma.

The chief complaints consisted of gross hematuria in 34 patients, urgency, frequency, dysuria, suprapubic pain in 4 patients, and clot retention in 4 patients.

Of the total number of cases there were 30 whites and 24 colored patients. The sex incidence was 40 males and 14 females.

The pathology slides were all reviewed and classified as to grade of malignancy, according to Broder's method and as to presence of muscle invasion (infiltration) or absence of invasion (papillary). (See Table 8).

TABLE 8
GRADE AND CHARACTER OF TUMOR AS TO INFILTRATION OF PAPILLARY FORMATION

Grade	Papillary	Infiltrative
I - II	18	8
III - IV	0	22
Totals	18	30

TABLE 9
AGE GROUP INCIDENCE OF CARCINOMA OF BLADDER

Age	Number of Patients	Per Cent
31-40	1	2
41-50	8	15
51-60	8	15
61-70	16	30
71-80	14	25
81-90	7	12
Total	54	

The most helpful radiologic procedure in diagnosis was an intravenous pyelogram. Of 31 IVP's performed, 15 were abnormal. Abnormal IVP's indicated the presence of hydronephrosis, nonfunctioning kidney or an intrinsic filling defect of the excretory cystogram.

TABLE 10
METHODS OF TREATMENT OF CARCINOMA OF THE URINARY BLADDER

Method	Number of Treatments
Transurethral	
Once	20
2 or more	7
TUR plus segmental resection	9
Transvesical fulguration	5
Cystectomy	3

Table 10 indicates the types of surgical treatment utilized. Eleven patients were also given x-ray therapy.

Of the 54 patients, the medical charts of 39 were reviewed, 5 patients were untraceable, and 15 medical charts were not

available. The patients who were untraceable will be considered as deceased. There are 17 living patients and 22 patients who are known dead or have been lost to follow-up.

Table 11 indicates the survival time of patients with carcinoma compared to the grade of tumor and the presence or absence of muscle invasion.

TABLE 11
SURVIVAL TIME IN YEARS OF PATIENTS WITH TRANSITIONAL CELL CARCINOMA OF THE BLADDER ACCORDING TO GRADE OF TUMOR AND PRESENCE OR ABSENCE OF MUSCLE INVASION

Grade	Time Lived In Years After Diagnosis									
	Papillary 15					Infiltrative 20				
	0-1	1-2	2-3	3-4	5 or more	0-1	1-2	2-3	3-4	5 or more
I - II	7	1	2	3	3	2	--	--	2	--
III - IV	--	--	--	--	--	8	4	2	1	1

From Table 11 it can be seen that 3 patients out of 15 with a low grade papillary bladder lived more than five years. Of the 20 patients with a high grade, infiltrative tumor there is only one who has lived more than five years. The high number of deaths within the first year is due to post-operative deaths.

Of the 6 patients with squamous cell carcinoma of the bladder the chart was not available in 2 cases, 3 patients lived less than one year and 1 patient is living after ten months.

There was only one patient who had adenocarcinoma of the bladder. This patient had a long history of seven urethral strictures and the tumor was diagnosed at the time of cystotomy because of an impassable stricture.

Carcinoma of the Ureter

There were only 2 cases of transitional cell carcinoma of the ureter during the ten year period. These cases occurred in a female aged 61 and a male aged 82. Each case presented a nonfunctioning kidney and hematuria. The male patient subsequently was diagnosed as having adenocarcinoma of the prostate. The female also had transitional cell carcinoma of the bladder.

Treatment consisted of ureteronephrectomy.

The female patient survived three years and nine months. The male patient is living after more than seven years.

Carcinoma of the Testicle

There were a total of three patients with testicular tumors and all had seminomas. The ages in this group were 22, 30, and 60 years. The left testicle was involved twice and the right testicle once. There was no follow-up on the younger patient since the chart was not available. The 30-year-old died after three months of obstructive jaundice and obstruction of the small bowel. The 60-year-old upon admission had a left hydronephrosis and pulmonary metastasis. After a radical orchidectomy and radiation therapy, the left kidney returned to normal and the pulmonary metastasis almost disappeared, six months postoperatively.

Carcinoma of the Penis

Of the 16 cases of carcinoma of the penis, there were 4 white and 12 colored patients. Table 12 indicates the age group range of these patients.

TABLE 12
AGE GROUP RANGE OF PATIENTS WITH CARCINOMA OF THE PENIS

Age	Number of Patients
21-30	1
31-40	--
41-50	2
51-60	5
61-70	2
71-80	4
81-90	2
Total	16

The main complaint was of an ulcerative lesion of the glans or prepuce which failed to heal and had been present from five months to four years. There were no patients who had been circumcised previously.

The pathologic diagnosis in 15 cases consisted of squamous cell carcinoma, Grade 1-2, and there was one case of adenocarcinoma of the penis; metastatic from the rectum.

Treatment consisted of amputation in 7 cases, circumcision in 1 case and amputation with groin dissection in 2 cases.

Of the 16 patients the medical record was not available in 7 cases. There are 5 patients who are dead, having lived for less than one year. Five patients are living, 3 of whom have lived more than five years; 1 has lived two years, and 1 patient has been followed for six months.

Summary

During the ten year period of 1950 through 1959, there occurred 124 carcinomas of the prostate, 14 of the kidney, 2 of the ureter, 54 of the urinary bladder, 16 of the penis, and 3 of the testis.



Remarks of Senior Editor

The functions of a medical editor are sufficiently magisterial in character to require him to maintain a constant supervision of all matters connected with, or in any manner affecting the advancement and welfare of his profession. If he is faithful and zealous, he will not hesitate to rebuke error and heresy whenever and wherever discovered. This duty, however, ought to be accomplished in a very impersonal manner, in order to occasion no pain, or angry feelings where such consequences can be avoided, but when a flagrant transgression is the matter *sub-judice*, it must sometimes occur that the medical editor should be permitted to enjoy that delicious satisfaction in discharge of bounden duty that old Nathan probably experienced when with finger pointed at the dread monarch, he exclaimed: "Thou art the man." * * *

I believe it is a fact well understood by the medical profession of this city that an unusual number of peculiar cases of sickness have occurred during the summer and early autumn of this year. The facts attending them remain to this time unrecorded * * *

In these remarks, I do not intend to intimate that all these cases were yellow fever, but on the other hand the presumption would be a very violent one which held that none of them were examples of that disease. * * *

In medical science, concealment, or wrong interpretation of facts connected with cases of disease, is an obstruction and a step backwards, towards periods when we had not reached our present degree of enlightenment.

New Orleans M. & S. J., 8:577 (Dec.) 1880

Traumatic Rupture of Spleen

• This is a thorough review of a series of fifty-one cases in which there were seven deaths. It is pointed out that there are four clinical syndromes, dependent upon the rate of hemorrhage.

D. V. CACIOPPO, M. D.
LEONARD H. STANDER, M. D.
Baton Rouge

Introduction

THE incidence of splenic rupture is much more frequent than is generally realized, and is increasing along with the increase in automobile and industrial accidents. In every instance of trauma to the abdomen or thorax, this possibility of injury to the spleen must be considered, and one must be on the alert in interpreting the symptoms, signs, x-ray studies and laboratory findings. Immediate intra-abdominal hemorrhage from the spleen is frequently difficult to diagnose early, as many of the patients have usually been in a serious accident, have multiple injuries and are in a state of shock on admission to the hospital. The presence of intra-abdominal hemorrhage contributes to the severity and prolongation of shock. It is essential that these patients be followed very carefully, for changes may be rapid and disastrous.

The seriousness of this injury is seen in the mortality statistics. Without surgical treatment, over 90 per cent will die; with surgery, the reported mortality varies from 10 to 25 per cent. Every physician who is called upon to see injured people should be acutely aware of this.

Incidence

In the ten-year period, from 1948 to 1958, 51 splenectomies have been performed for splenic rupture at the two hospitals in this city of 130,000. It is likely that some patients never reached the hospital or the operating room, as multiple injuries and shock caused early death. This is reported to be the most common of the serious closed injuries to abdominal viscera. Wright and Prigot found this incidence to be 47.6 per cent, with liver injury being next in frequency with a 28.6 per cent incidence. This injury is found in about 0.15 per cent of all the hospital admissions due to trauma.

Anatomy and Physiology

The spleen is deeply situated in the left hypochondriac area, lying obliquely—its long axis coinciding with the line of the tenth rib. Its highest point is on a level with the ninth dorsal spine; its lowest point is at a level of the first lumbar spine; its posterior border is about 1.5 inches from the median plane of the body; and its anterior border reaches the mid-axillary line. It is almost entirely surrounded by peritoneum, which is firmly adherent to its capsule. The organ is held in position by two peritoneal folds—the phrenicolienale ligament which contains the splenic artery and vein, and the gastrolienale ligament which contains the vasa brevia.

The spleen is a very vascular organ composed of friable lymphoid tissue held together by a network of thin fibrous trabeculae and a thin fibrous capsule. The friable nature of the splenic tissue, together with its mode of suspension—being relatively fixed posteriorly by the phrenicolienale ligament—explain the frequency with which the spleen is ruptured in spite of its protected position.

The physiology of the spleen is still not completely understood. Three well-recognized functions may be given—the storage of blood; the destruction of formed blood elements, particularly the red blood cells and probably the white blood cells and platelets; and the production of lympho-

cytes and monocytes in the lymphoid tissue composing the malpighian corpuscles. The spleen may have some effect upon maturation of cellular elements in the bone marrow and upon the release of cells from the marrow through a substance secreted into the blood stream.

Material

In this group, 32 were males and 19 were females; 4 of whom were pregnant. The ages varied from 2 years to 78 years and were distributed as given in Table 1.

Symptoms and Signs

The diagnosis of traumatic rupture of the spleen is not simple. There are no pathognomonic signs or symptoms and each case must be considered individually on the basis of the available findings. The

TABLE 1

Years	
2 to 10	8
11 to 20	15
21 to 30	9
31 to 40	6
41 to 50	5
51 to 60	5
61 to 70	2
71 to 78	1

TABLE 2
TYPES OF TRAUMA

Automobile accidents	29
Struck by car	4
Playing football	2
Playing basketball	2
Playing softball	1
Fall from height	2
Train accident	1
Fall off bicycle	2
Fall off horse	1
Struck with fist	1
Boat accident	1
Fall while walking in house or yard	4
Weight falling on patient	1

signs and symptoms are those of local injury, hemorrhage, shock, peritoneal and diaphragmatic irritation and those associated injuries related to head, chest, pelvis and extremities.

Abdominal pain is the ever present complaint, usually generalized, but more severe in the left upper quadrant, and described as being sharp and lancinating or a dull ache. It may be intermittent due to repeated small hemorrhages. The radiation of pain to the left shoulder (Kehr's sign) has been infrequent in this series, being recorded in 5 cases. It may be that the patients were not questioned specifically about this complaint or most of them are too ill to volunteer that complaint. The radiation of pain is due to blood irritating the diaphragmatic peritoneum involving the phrenic nerve terminals. Nausea and vomiting may not be considered as characteristic or diagnostic (Table 3).

TABLE 3
SYMPTOMS

Abdominal pain alone	24
Abdominal and chest pain	25
Nausea and vomiting	20
Pain in left shoulder	5
Pain in right shoulder	1

If possible, it it very important to try to get history of injury to the splenic area. Occasionally there is no evidence of external injury to the skin. Abdominal tenderness with or without rigidity is always present to some degree, usually localized to the epigastrium and left upper quadrant. One must be cognizant of the fact that it may be generalized or primarily in the lower quadrants depending on the distribution of free blood in the peritoneal cavity. Ballance's sign—shifting dulness in the left flank due to blood is described in nearly every report, but it is difficult to elicit and was not recorded in a single case in our series. We have been impressed with two signs, the presence of a protuberant abdomen and the absence of peristaltic sounds. Both are the result of blood in the peritoneal cavity and have been noted in each of our personal cases. A somewhat doughy sensation on abdominal palpation has been constantly present.

Shock, pallor, sweating, rapid and weak pulse and lowered blood pressure appear after severe hemorrhage, but at the time of the first examination these may be absent. (Table 4).

TABLE 4
PERTINENT FINDINGS

Shock	20
Abdominal tenderness alone	16
Abdominal tenderness with rigidity	35
Comatose	3

The blood pressure, pulse, hemoglobin, red blood cell count and hematocrit may be relatively normal when the patient is first seen. Even though the blood loss may be considerable, the marked vasoconstriction of the organism and hemoconcentration attempt to compensate for it. It is only when hemodilution begins or blood loss is great that the hemogram begins to show changes. Careful observation of these is of inestimable value in following the injured patient.

Urinalysis revealed hematuria in 17 patients, indicating trauma to kidney, but no patient required any treatment for this.

Diagnosis

Peritoneal tap was an infrequently used diagnostic procedure in this series. It is a valuable aid and should be used more frequently in evaluation of patients with blunt trauma to the abdomen when the diagnosis is in doubt and particularly in comatose patients.

TABLE 5
RED BLOOD CELL COUNT (IN MILLIONS)

4 to 5	30
3 to 4	13
2 to 3	3
Not done	5

TABLE 6
WHITE BLOOD CELL COUNT (IN THOUSANDS)

5 to 10	4
10 to 20	15
20 to 30	20
Not done	12

In doing peritoneal tap, the skin of the abdomen is prepared with suitable antiseptic solution, a small wheal is raised with 1% xylocaine solution, a 2 mm. skin incision is made to allow introduction of a blunt 17 gauge spinal needle or Potter needle. With stylet in place, the needle is slowly introduced. Once inside the peritoneal cavity, stylet is removed and attempt is made to aspirate fluid. To aid in this the patient is positioned on his side in order to facilitate collection of fluid. Aspiration is done from all four major quadrants unless a positive puncture is immediately obtained. The safety of this procedure has been verified by much experimental and clinical work.

Diagnostic paracentesis must be considered as an ancillary diagnostic aid; and like all other laboratory aids, it must be interpreted with the clinical findings and correlated with the patient's progress. The presence of negative tap in no way precludes operative intervention or close observation. Five to ten per cent false negatives will be obtained. In this group of cases, paracentesis was recorded as being done in only three patients, all of which were positive.

Roentgen studies of these patients is an important phase of their appraisal and several positive findings have been described—enlargement of splenic shadow, displacement of stomach or splenic flexure of colon, dilatation of stomach with serrations along greater curvature, and elevation of left hemidiaphragm. Thirty-six of these patients had abdominal x-rays made, with 30 being negative. Unusual gastric dilatation was noted in 2; enlargement of splenic shadow with displacement of stomach to right in 4; and elevation of left hemidiaphragm in 2. X-rays are essential in evaluating the chest and skeletal system; in this group, 17 patients had rib fractures on the left side. Pneumothorax was present in 6 of these.

Unfortunately, other traumatic conditions are capable of simulating abdominal injury when no such injury exists. These are thoracic, spinal, and retroperitoneal injuries, all of which may closely imitate intra-abdominal conditions. This arises from the fact that the abdominal parietes receive their innervation from the lower six thoracic nerves so that injury to the spine or thorax in the course of these nerves produces referred sensory pain, tenderness, and muscle spasm which are localized to the abdominal wall as well

as at the site of injury. It is also obvious that both types of injuries may be present. It is these cases that test your diagnostic acumen and require careful and repeated examinations, frequent blood studies, adequate x-ray studies, abdominal paracentesis and a certain index of suspicion.

As expected, many of these patients had other serious injuries, but it was surprising to us that 26 of them had splenic rupture with only minor contusions and abrasions. Thirty-seven had splenic rupture without any other intra-abdominal injury. (Table 7).

TABLE 7
ASSOCIATED INJURIES

Fracture of ribs	17
Pneumothorax	6
Fracture of pelvis	5
Fracture of long bones	10
Fracture of vertebrae	3
Severe head injuries	3
Intra-abdominal injuries	13
Laceration of liver	5
Rupture of pregnant uterus	1
Abruptio placenta	2
Rupture of left diaphragm	4
Rupture of right diaphragm	1
Tear in mesentery	1
Tear in mesentery with devitilization of segment of small bowel	2
Transection of jejunum	1

Clinical Syndromes

Four distinct clinical syndromes can be recognized, all dependent on the rate of hemorrhage.

1. The first group consists of those with primary rupture and immediate hemorrhage. This is the patient with acute continuing hemorrhage which produces shortly after the injury a state of shock that rapidly or gradually becomes more severe. The bleeding may be temporarily masked by transfusions or other intravenous therapy, but in a few hours, the signs and symptoms will warrant exploration. These will come to surgery within twelve hours. We had 32 patients in this category. The spleen was found to have single or multiple deep lacerations or there was injury to the splenic pedicle at the hilum. Occasionally fragmentation of the organ was encountered.

Case Report: This 18 year old white male collided with another male while playing softball. He continued to play for about half an hour and then began to complain of pain in the abdomen which gradually became worse, and pain in the left shoulder. Within an hour he became weak, dizzy, pale, and fainted.

On admission to the hospital, his blood pressure was 88/60; pulse 110; and examination of the abdomen revealed generalized tenderness and rigidity. Hemogram was: hemoglobin 10.0 gms., red blood cell count 3,790,000, and hematocrit 34. As soon as blood was matched for transfusion, he was taken to the operating room and a spleen with multiple deep lacerations was removed. No other intra-abdominal injury was present.

2. The second group of patients consists of those with repeated small hemorrhage. These enter the hospital in good condition, but show signs of slow progressive hemorrhage as evidenced by increasing anemia, rising pulse rate, slow fall in blood pressure, progressive weakness, increasing abdominal pain and tenderness, and distention. Again transfusions and intravenous therapy will mask the picture. The mechanism is that of tamponade of the splenic tear by omentum and blood clot with temporary cessation of bleeding. These will usually come to surgery within seventy-two hours. We had 12 cases in this group. It is here that careful observation, and repeated determination of red blood cell count and hematocrit are essential. At surgery, these patients are found to have lacerations of the spleen with ineffectual tamponade by blood clot, omentum, or adjacent organs.

Case Report: This 22 year old white male was injured in an auto accident. Upon admission to outlying hospital, his general condition was good and his only complaints were moderate pain in the left chest and mild upper abdominal discomfort. X-ray of chest revealed fracture of the left ninth rib.

During the next forty-eight hours, he gradually began to complain of more abdominal pain; distention, nausea and vomiting ensued. On admission to our hospital, he was complaining of severe abdominal pain, nausea, chest pain and left shoulder pain.. Blood pressure was 170/90, pulse rate 100/min. The abdomen was moderately distended and peristaltic sounds were absent. Acute generalized abdominal tenderness with rigidity

over the upper abdomen was present. Hemogram was: red blood cell count 2,270,000; hemoglobin 5.75 gms; hematocrit 20; white blood cell count 19,200 with 86% neutrophils. Urinalysis was negative. X-ray of abdomen showed enlargement of splenic shadow and dilatation of stomach with displacement to right.

At exploratory laparotomy, about 1,500 cc. of liquid and clotted blood were present, the spleen was lacerated and splenectomy was done.

3. The third group consists of those patients with late or delayed hemorrhage. The patient has an initial acute injury from which he apparently recovers completely. After a period of relief from symptoms, he may suddenly go into shock showing signs of acute concealed hemorrhage or he may have a recurrence of signs and symptoms of repeated small hemorrhages. These patients have had intra-splenic hemorrhage with an intact capsule or temporary effective tamponade. Straining at stool, vomiting, coughing or a full meal will furnish the mechanism for further hemorrhage. There were six patients in this category.

Case Report: This 39 year old white male was admitted to the hospital after an automobile accident, complaining of left chest pain. Blood pressure was 120/90, pulse 80. There was tenderness over left hemithorax. Abdomen was soft and not tender. Red blood cell count was 4,200,000; hemoglobin was 11.5 gms; and urine contained innumerable red blood cells. X-ray of chest revealed fracture of left clavicle and several ribs on left side.

Progress was uneventful until the fifth day. After receiving an enema, he began to complain of severe abdominal pain and became pale, weak and sweaty. Blood pressure was 80/40, pulse 120. Distention and generalized abdominal tenderness were present.

At surgery, ruptured spleen was removed. He had an intra-splenic hematoma with rupture into the peritoneal cavity after the enema.

Case Report: This 22 year old male was struck on left side while playing basketball. For the next two weeks, he had mild discomfort in the left lower chest and upper abdomen, but did not seek medical advice and continued class work. Then, he began to have increasing pain in the left upper abdomen with gradual decrease in the blood count from 4,500,000 to 3,000,000 over the next three days.

Examinations at this time revealed blood pressure 110/70; pulse 100; temperature 101°. The abdomen was distended. Tenderness and rigidity were present over the epigastrium and left upper quadrant.

At surgery, a lacerated spleen with a large amount of organizing and liquid blood in the left subphrenic area was found. Postoperative record was uneventful.

4. The fourth group includes one patient who was admitted for complication of traumatic injury to spleen whose hemorrhage had ceased spontaneously.

Case Report: This 14 year old white male was admitted with fever of eight days' duration, malaise, pain in left upper quadrant, lower chest and left shoulder. He gave history of having been thrown off a horse two weeks before symptoms began, without having any immediate difficulty after fall.

Examination on admission revealed temperature 100.4, heart and lungs clear, abdomen soft without tenderness or masses. Tentative diagnosis was probable rheumatic fever.

Hemogram revealed: red blood cell count 4,910,000, hemoglobin 12.5 gms; white blood cell count 21,100 with 73% polymorphonuclear leucocytes. X-ray of chest showed slight elevation of left diaphram. Battery of other laboratory tests revealed no other positive findings.

For one week, he continued to have low grade fever. Then, fever spiked daily to 103°. Chest, left upper abdominal and shoulder pain became more severe; breath sounds were diminished at left base; and acute tenderness and rigidity were present over left upper quadrant.

At surgery, two weeks after admission and five weeks after injury, he was found to have an indurated mass in left subphrenic area with omentum densely adherent to it. On entering this mass, about 1,000 cc. of thick brownish-grey seropurulent material was evacuated along with organizing blood clots and fragments of splenic tissue.

Pathological report was necrotic splenic tissue with blood clot. On culture of material a gram negative microaerophilic rod was found. His operative course was uneventful.

TABLE 8
INTERVAL BETWEEN TRAUMA AND SURGERY

0 to 12 Hours	32
12 to 48 Hours	9
49 to 72 Hours	3
4 to 7 Days	5
17 Days	1
5 Weeks	1

The only operative procedure to consider in splenic injury is splenectomy. This was done in 50 of these patients. In the other one, drainage of the left upper quadrant abscess was done as desribed previously. Additional procedures carried out are listed in Table 9.

TABLE 9
ADDITIONAL PROCEDURES

Suture or packing of laceration of liver	4
Repair of lacerations of diaphragm	5
Porrosection	1
Cesarean section	2
Small bowel resection or repair	3
Immobilization of fractures	8
Tracheotomy	1
Laminectomy	1

Mortality

Decrease of the mortality from splenic rupture has been rapid in recent years due to greater availability of blood, improved anesthesia and improved overall care of injured patients. There were 7 deaths (13.7 per cent). Three patients recovered from the immediate injuries to die of later complications. One died of severe fulminating hepatitis fourteen weeks after injury; another of myelogenous leukemia three weeks after injury when spleen had been ruptured by a fall in his home; and the third died four months after surgery from cerebral damages as a result of cardiac arrest during operation.

Four patients died during the immediate postoperative period and all had serious extra-abdominal injuries. The first of these was found to have extensive laceration of the righ lobe of liver and died four days later with massive necrosis and infarction of liver parenchyma and lower nephron nephrosis. The second patient expired thirty-six hours after accident of severe head injury, never having regained consciousness. The third patient was critically ill on admission to our hospital, three days after his original injury. He had severe chest injury with bilateral rib fractures, marked obesity and severe ileus. He expired forty-eight hours after surgery of myocardial failure and peripheral vascular collapse. The fourth patient expired three days after surgery and in addition to the splenic rupture he had bilateral rib fractures, contusions of both lungs, laceration of right diaphragm and injury to the mesentery, which necessitated resection of 12 inches of jejunum. Death was attributed to pulmonary complications.

From this, it can be seen that mortality can be attributed in three cases to severe injuries other than to the spleen, in one case to hepatitis, in one case to leukemia, in one case to cardiac arrest and in one case possibly to delayed surgery.

Other non-fatal complications encountered are shown in Table 10.

TABLE 10

Subphrenic abscess	2
Liver abscess	2
Abdominal wall abscess	2
Hepatitis	1
Phlebitis with pulmonary infarction	1

Summary

1. Fifty-one cases of traumatic rupture of the spleen are summarized.

2. The anatomy and physiology are reviewed.

3. The symptomatology is reviewed and four distinct clinical syndromes are described, dependent on the rate of hemorrhage. Illustrative case reports of each group are given.

4. The treatment, once a diagnosis is made, can only be splenectomy.

5. Decrease in mortality rate has been rapid in recent years, and except in cases where the diagnosis was unrecognized, the mortalities have been due to associated injuries.

6. It is essential that frequent careful examinations and repeated blood studies be done when splenic injury is suspected.

The Variable Histologic Pattern of Hepatoma*

• This study of twenty-two cases from two thousand autopsies points out the difficulties in making a satisfactory system of grading of these tumors.

PHILIP PIZZOLATO, M. D.†
New Orleans

IN our study of primary carcinoma of the liver, we found that the histological and cytological features varied so much from patient to patient as well as from different tumor nodules from the same patient that a well defined cell type could not be established and that the grading of these tumors appeared impossible. Although Edmondson and Steiner[1] encountered a great variation in cytological details in their 100 cases, they attempted to classify their cases into four grades, using as a basis Broder's classification, modified for applicability to a solid epithelial organ. A difficulty was soon apparent as "Grade I is probably best reserved for those areas in Grade II carcinoma where the difference between the tumor cells and hyperplastic cells is so minor that diagnosis of carcinoma rests upon the demonstration of more aggressive growth in other parts of the neoplasm." Further, they encountered: ". . . in one case, a Grade II carcinoma with acini and bile formation was contiguous to an area of Grade IV carcinoma."

The material for this study was obtained from 22 cases among 2000 autopsies at the New Orleans Veterans Administration Hospital. The clinical and pathological findings have been reported previously.[2] Since the number of pure duct cell type was few and the histological features were fairly uniform, this study was limited to those tumors which were probably derived from the liver cell.

Microscopically, the basic cell structure is an attempted formation of the polyhedral liver cell with a pinkish-blue granular, abundant cytoplasm and a large nucleus which sometimes contains a large nucleolus. This simple appearing cell or well differentiated cell often presents difficulties in interpretation as it resembles the normal liver cell, and frequently blends imperceptibly with the adjacent normal cells. Occasionally, tall columnar cells are encountered. At times, these benign looking tumor cells are found in blood vessels and in metastatic sites (Figure 1). These cells can arrange themselves in structures resembling hepatic cords, acini, trabeculae or solid medullary nests and with spaces suggestive of canaliculi, ducts, sinusoids or vascular spaces. Frequently, the tumor lacks cohesiveness and isolated cells or small masses are found and appear to be floating in plasma or tissue juice.

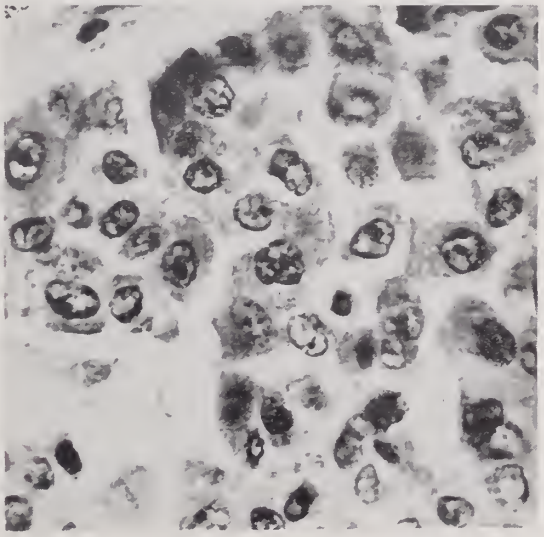


Figure 1. Metastatic nodule of hepatoma to lung, showing polyhedral cells arranged in cords in a well differentiated manner. Hematoxylin and eosin stains. 380X.

* Presented at the Eightieth Annual Meeting of the Loiusiana State Medical Society, in Baton Rouge, May 4, 1960.

† From the Clinical Laboratory, Veterans Administration Hospital and Department of Pathology, Louisiana State University School of Medicine, New Orleans, Louisiana.

Tumor giant cells have been noted in many instances. They show a variety of forms such as: (1) Large amounts of cytoplasm with a large oval solitary nucleus; (2) large cell with a single multilobed nucleus; and (3) large cell with many small nuclei.

The undifferentiated cell is characterized by a scant amount of basophilic agranular cytoplasm and a relatively large hyperchromatic nucleus with frequent mitotic figures. These cells occur in solid masses without obvious supporting stroma and frequently invade blood vessels, or at least form part of the wall of blood vessels (Figures 2 and 3).

The formation of bile, which is an evidence of function, is observed in most differentiated tumors including their metastases as well as in the undifferentiated cells. Bile can be found intracellularly as well as in the canaliculi. This was encountered in four cases. Hyaline bodies or the so called "Mallory bodies," which are eosinophilic masses and are believed to suggest some protein degenerative product, were found in four cases (Figure 4). Vacuoles which may represent fat, carbohydrate or simply hydropic degeneration were found.

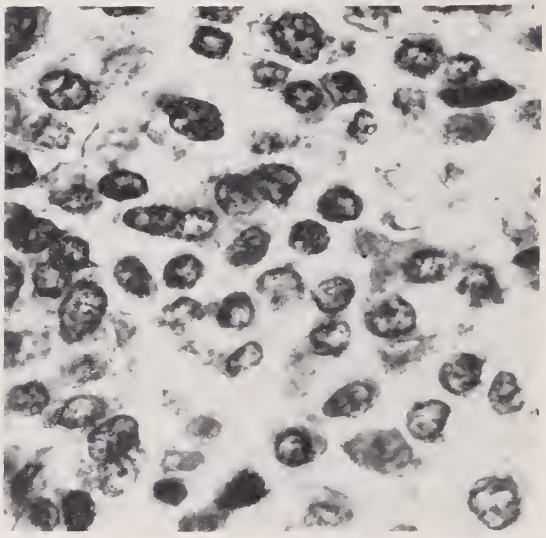


Figure 2. A medullary nest showing undifferentiated cells with large nuclei and scant basophilic nuclei. Hematoxylin and eosin stains. 380X.

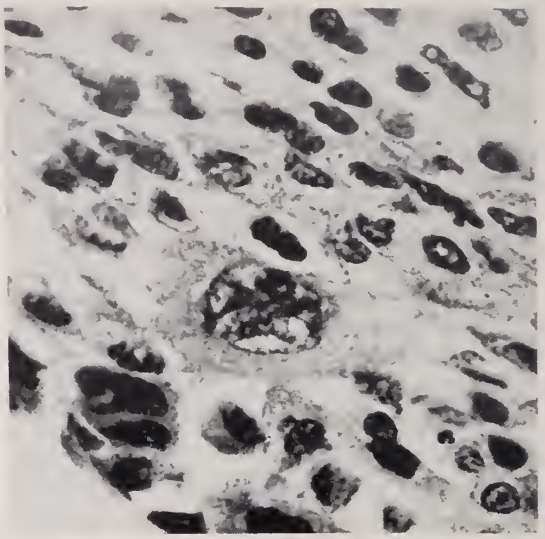


Figure 3. An undifferentiated hepatoma with a multilobed giant cell. Hematoxylin and eosin stains. 380X.

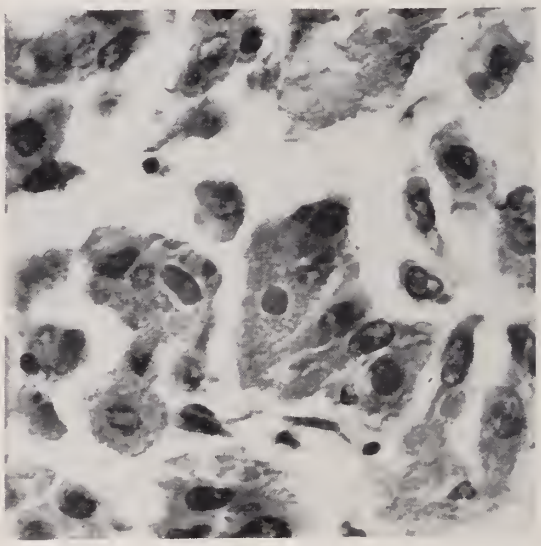


Figure 4. Adrenal with metastatic hepatoma showing Mallory hyaline bodies in the cytoplasm. Hematoxylin and eosin stains. 380X.

A Kupffer cell sarcoma was encountered in this series.[2] The elongated, spindle sarcomatous cells could be traced to oval or polygonal cells with oval or round hyperchromatic nuclei. From these, they appeared to have been derived from the hypertrophied Kupffer cells which lined the sinusoids adjacent to the liver cells.

Conclusion

Although our study was made from post-mortem material, it has been of great

value in the interpretation of needle biopsy in distinguishing: (1) Primary malignancy from metastatic carcinoma to the liver; (2) Regenerative phase of infectious hepatitis from primary carcinoma. Primary carcinoma tends to show more pleomorphism with a profound tendency for the formation of tumor giant cells. Bile formation and Mallory hyaline bodies are distinctive features of primary carcinoma.

The positive diagnosis of the regenerative phase of infectious hepatitis is difficult without a history as the regenerating liver cells tend to be polyhedral with eosinophilic cytoplasm with two and three nuclei. The adjacent liver cells may reveal degeneration and there may be an infiltration of inflammatory cells.

Summary

Primary liver cell carcinoma is characterized by cells which simulate normal liver cells to pleomorphoric forms showing a variety of giant cells to undifferentiated cells. These tumors do not group themselves to permit a satisfactory system of grading. Bile and Mallory bodies can be formed by these malignant cells.

Acknowledgment: The author wishes to express his sincere thanks to Messrs. William Bohon and Thomas Morris for their photographic work done on this paper.

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The "Therapeutic Boom" and Unscientific Advertising

F. E. Stewart, Ph.G, New York City

To protect the medical profession, it is proposed to discountenance the employment of any new remedy until it is introduced into the Pharmacopœia. Such an introduction can be effected but once in ten years, at which time the Pharmacopœia is revised.

Now I do not dispute that the object which is thus aimed at is to be greatly desired, or that by accomplishing it scientific medicine will be benefited thereby, but I do not think the method chosen is a good one. Advertising is legitimate as long as it tells the truth, the whole truth, and nothing but the truth. It is only when it is misleading that it should be discountenanced. Now, if the profession should take a stand to stop all advertising, and shut down on the use of a single remedy advertised, what would be the result?

* * *

Finally then, I respectfully request the profession not to wait until a new remedy becomes official in the U.S.P. before using it, but to thoroughly test all such remedies carefully, in numerous cases, in the hospitals and dispensaries, so that when they are presented for acceptance to the Pharmacopœia committee, at the next revision there may be furnished concurrently, with every new drug, reliable information concerning it.—*Med. and Surg. Rep., Nov. 27.*

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Editorial

Exploitation Of Patients With Arthritis

Medical quackery is the most prevalent and lucrative swindle in this country today. Sufferers from arthritis and rheumatic diseases are the most exploited of all disease victims. Of the nation's eleven million victims of arthritis, about half spend more than $250,000,000 each year for misrepresented drugs, devices, and treatments. More than twelve hundred such frauds are presently being offered with misleadingly implied benefits.

Few physicians are aware of the extent of this fraud. The facts of this situation have been ably presented in "The Misrepresentation of Arthritis Drugs and Devices in the United States."[1] This report covers the various angles of the problem and outlines ways and channels through which improvement might be accomplished. This comprehensive study omitted all ethical drugs, procedures, and treatments, including simple aspirin products.

For purposes of this study, a product or treatment was considered to be misrepresentative if it created or tended to create an economic or health problem to the arthritic. Specifically designated were:

1. Those which have recently or frequently been the subject of government action on the grounds of misbranding or false or misleading advertising;

2. those which are in a general category authoritatively declared of no value in the treatment of arthritis and rheumatism (e.g., alfalfa products and vibrator machines);

3. those in which the only active ingredient is aspirin or sodium salicylate and yet are sold at increased prices as offering additional benefits.

Arthritics are the most vulnerable group for misrepresentations. This is the result

[1] The Misrepresentation of Arthritis Drugs and Devices in the United States; a Report to Committee on Arthritis Advertising, The Arthritis and Rheumatism Foundation by Ruth Walrad, Research Consultant.

of the folowing facts which apply to the arthritic situation.

There is no known cure for the major serious forms of arthritis. This group of diseases runs a course which is marked by periods of remission and exacerbation. The arthritic in his despair wants to believe that complete relief can be found and is in a receptive mood when fake claims arouse his hope. Misrepresentations apply to all media by which advertising is accomplished. The cost of this is estimated at more than $100,000,000 a year, all used in persuading the arthritic to spend on faith.

Investigation of one thousand arthritics indicated that the largest number of purchases were made as the result of television advertisement, with 25 per cent so indicated. Other media were newspapers 21 per cent, magazines 15 per cent, and radios 10 per cent. Drugstores were overwhelmingly the point of purchase with a 52 per cent response.

The products and treatments sold were pills, liquids, liniments, lotions, poultices, metal bands, bracelets, vibrator machines, advice about food and drink, mitts padded with low grade uranium ore, the privilege of sitting in abandoned mines which had been baldly represented as containing uranium ore, and which presumably would give off radiations of supposed benefit to arthritics. "Glorified aspirins" represent what is perhaps the greatest problem of misrepresented drugs. Usually, the more worthless the product, the more flagrant and lurid are the claims made for it. Typical phrases mark the product, such as, "an amazing new discovery," "used by doctors," or "now available without prescription." The arthritic wastes both his money and his health as he responds to advertising of products, which at worst are positively harmful, and at best fall far short of their claims.

The sufferer from arthritis is tempted to place unjustifiable confidence in a remedy for which startling claims are made. This is because he feels that fraudulent advertising is prohibited, and wants to think that the remedy will be effective. He does not realize the slow and difficult legal process involved in removing a blatant fraud from the market.

The legal situation with reference to these frauds is in a continuous state of evolution. Inadequate enforcement regulations and practices have sapped much of the vigor from otherwise strong federal prohibitions against drug abuses. The basic drug laws are contained in two statutes enacted in 1938: The Federal Food, Drug, and Cosmetic Act of 1938 (Copeland Act), and the Federal Trade Commission Act of 1938 (Wheeler-Lea Act). The Post Office also has authority to regulate labelling and advertising through its mail fraud provisions, undisturbed since the 19th Century. The dual 1938 legislation, though imperfect, was a vast improvement over the 1906 Pure Food, Drug, and Cosmetic Act, but it has not solved the problem of misrepresentation. The enforcement agencies are limited in their efforts by budget requirements. In addition, the burden of proof rests with the government. If the complaint against the manufacturer or the distributor is contested, the due process of law often takes years to reach a final decision. A lay jury may take as its guide a patient's ill founded testimonial as against an expert medical opinion.

Decisions of one agency of the government are not binding on another. Charges proved by one must be re-proved by another. Conviction may be difficult to secure. A notable example is "Imdrin." It took from 1949 to 1955 to stop this preparation being advertised as "an amazing new discovery for rheumatism, bursitis, and arthritis." In the government's action against "Dolcin," which lasted from 1949 to 1956, a contempt action was finally issued against this company. Even though the Commission obtained an initial decision in November 1959, unfavorable to the Witkower Press, publishers of "Arthritis and Common Sense," by Dan Dale Alexander, appeals are still being heard and will continue probably to the Supreme Court.

The Post Office Department is handi-

capped by the necessity of having to prove fraud, that is, knowledge and intent to deceive, as well as false and misleading statements.

The need for strong State laws is as important as effective federal legislation. At present, twenty-four states have Copeland-type laws. The three states credited with having the most effective enforcement of these uniform Food and Drug laws are California, Arkansas, and Indiana.

The solution to the problem of misrepresentation will come only as the result of steady, continuing effort in two fields: (1) the strongest possible legal controls, adequately enforced; (2) a public educated to recognize false claims and resist them. The public, in general, requires continuous education in the evils of medical quackery.

At present, there is a prevailing general public apathy towards the problem. This makes the work of enforcement agencies more difficult. An aroused public could render invaluable assistance in reducing and controlling this traffic in human misery.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

ANNUAL MEETING
SURGICAL ASSOCIATION OF LOUISIANA

The Surgical Association of Louisiana held its Annual Meeting on Sunday, November 20, 1960, at the Sheraton-Charles Hotel in New Orleans.

The meeting was well attended and a most interesting scientific program was presented for its members.

A most enjoyable cocktail party and a most sumptuous banquet were enjoyed by all.

The orator for the evening was Congressman F. Edward Hebert who presented a rather unique plan for supplying the United States Government with sufficient medical personnel for military use. Congressman Hebert suggested that the United States Government create a federal medical school, conducted with government funds from which would be graduated a sufficient number of M. D.'s for their requirement in the same manner in which the Government is conducting the West Point Military Academy, the U. S. Naval Academy and Air Force Academy to supply officers in these respective departments. Of course, these graduates in medicine would obligate themselves and be required to follow a career in medicine in the military field of Government, thereby making it unnecessary to draft or use civilian doctors for these services. This, he claims, with the increased civilian graduates in medicine due to increased medical schools and increased facilities of our present medical schools would, to a great extent, supply enough physicians for our civilian population.

It is felt if the school is conducted strictly in accord with his plans the plan has some merit and is worth further investigation and consideration on the part of organized medicine as to its usefulness and practicability.

The following officers and board members were elected:

Dr. Daniel J. Fourrier, President
Dr. Walter F. Becker, First Vice-President
Dr. Claude C. Craighead, Second Vice-President
Dr. J. Morgan Lyons, Treasurer
Dr. Richard L. Buck, Secretary
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THE CULT OF CHIROPRACTIC

Our Society has received some credit nationally for the position we have taken through the years in fighting to prevent Chiropractors from being legalized to practice in Louisiana, as shown by the folowing article appearing in the November, 1960 issue of "*The Doctor and the Law.*"

The Cult of Chiropractic by C. E. Boyd, M. D.,

Shreveport, Louisiana. Published jointly by the American Medical Association and the Louisiana State Medical Society. Second edition, 1960.

Ever since chiropractic was originated, back in the late 1800's, by a former grocer named D. D. Palmer, it has had a rather stormy career, both in the courts and legislatures and in its relations with the medical profession. Both medicine and osteopathy, in fact, have castigated it from the very beginning. Those interested in the history of this activity may read the very latest report on it in this pamphlet. Perhaps chiropractors will take issue with some of the statements found in the pamphlet. There is every reason to believe, however, that the factual material, particularly that relating to the educational requirements and legal status of chiropractic, is completely accurate. Obviously, the study is written from the viewpoint of medicine and that viewpoint is clearly stated in these words: "The medical profession holds that the chiropractic theory of disease runs counter to so many established facts of medical science that it is not entitled to any consideration . . ." The public is entitled to know the position of medicine and the facts upon which that position is taken. This pamphlet leaves no doubt as to the position and the facts. It makes a closing plea that there be a single standard for all who would practice medicine in any way. "Let that standard be a high one to protect the public welfare. Let all who enter that portal be men who are educated and trained and experienced to care for the health of people." Certainly no one can quarrel with such an objective.

With the continued support of our physicians we will continue to fight for high educational qualifications for the doctors who will treat the citizens of our State as we have religiously done in the past. We feel that we owe this protection to our good people. Of course, it is greatly regretted that the public does not know that these chiropractors are really not doctors of medicine, but are wholly unqualified by educational attainments and training and unfitted morally to practice medicine since they have demonstrated that they have no obligation or responsibility as a citizen to uphold our laws by practicing illegally in Louisiana.

With your assistance, we will continue our fight to see that the citizens of Louisiana will receive the best medical service possible in providing for them high class scientific medical doctors as against Chiropractic quackery.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

FUTURE MEETINGS

WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY & OTOLARYNGOLOGY

The West Virginia Academy of Ophthalmology and Otolaryngology will hold its annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia on April 6th, 7th, and 8th of 1961.

In addition to the scientific program, arrangements have been made with Mr. Philip Salvatori of Obrig Laboratories to discuss and show techniques of contact lens fitting.

For additional information please contact the secretary, Dr. Worthy W. McKinney, 109 East Main Street, Beckley, West Virginia.

GILL MEMORIAL THIRTY-FOURTH ANNUAL SPRING CONGRESS

The Gill Memorial Eye, Ear and Throat Hospital will hold its Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology

and Allied Specialties, April 10 through April 15, 1961. There will be twenty guest speakers and fifty lectures.

THE AMERICAN COLLEGE OF ALLERGISTS

American College of Allergists Graduate Instructional Course and Seventeenth Annual Congress, March 12-17, 1961, the Statler Hilton, Dallas, Texas. For information write, John D. Gillaspie, M. D., Treasurer, 2141 14th Street, Boulder, Colorado.

DIVISION OF GRADUATE MEDICINE

Postgraduate Short Continuation Course in Anesthesia

JANUARY 26, 27, AND 28, 1961

DR. JOHN ADRIANI, CHAIRMAN

Program will include lectures, discussions, and clinical demonstrations both at Tulane Medical School and at the Charity Hospital of Louisiana.

Participating Faculty from the Faculties of the Schools of Medicine of Tulane and L.S.U.

AMERICAN DIABETES ASSOCIATION

The American Diabetes Association, Inc., will hold its Ninth Postgraduate Course in Diabetes and Basic Metabolic Problems in New Orleans on January 18, 19 and 20, 1961.

CONTACT LENS COURSE

"The University of Texas Postgraduate School of Medicine announces the Second Annual Contact Lens Course, scheduled for April 19, 20 and 21, 1961 in Houston, Texas. The reception of the first course was such that it was decided to repeat the course annually.

The instructors for this course are ophthalmologists skilled in this field, and experienced teachers. This course is designed so that those completing it will be proficient in all phases of contact lens fitting and adjusting. A departure in the teaching technique will be the use of closed circuit television during the didactic part of the course.

The course will be limited to 35 board certified ophthalmologists or residents and fellows in ophthalmology. Registration for this course will close February 28, 1961.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 410 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas."

GASTROENTEROLOGISTS ELECT

Dr. Louis Ochs, Jr., New Orleans, La. Associate Professor of Medicine, Louisiana State University School of Medicine, was chosen as President-elect of the American College of Gastroenterology, at the Annual Meeting of the College, held Sunday, October 23, 1960, in Philadelphia, Pa. He will assume the Presidency at the next Annual Meeting, to be held in Cleveland, Ohio, in October of 1961.

Dr. Henry Baker of Boston, Mass., selected President-elect in Los Angeles in 1959, assumed the Presidency of the College at the Annual Dinner-Dance held at the Bellevue-Stratford in Philadelphia, on Tuesday evening, October 25, 1960. He succeeded Dr. Joseph Shaiken of Milwaukee, Wisc., who became Chairman of the Board of Trustees.

Other officers elected were: Vice-Presidents —Drs. Edward J. Krol, Chicago, Ill.; Theodore S. Heineken, Glen Ridge, N. J.; Donald C. Collins, Hollywood, Calif.; and Robert R. Bartunek, Cleveland, Ohio. Re-elected were: Secretary-General—Dr. Lynn A. Ferguson, Grand Rapids, Mich.; Secretary—Dr. Louis L. Perkel, Jersey City, N. J.; Treasurer—Dr. William C. Jacobson, New York, N. Y.

Elected Trustees were: Drs. Jerome A. Marks, New York, N. Y.; David A. Dreiling, New York, N. Y.; Christopher A. Beling, Montclair, N. J.; Charles W. McClure, Boston, Mass. and Harold Messenger, San Diego, Calif. Re-elected were: Drs. Lionel Marks, Toronto, Ont.; John M. McMahon, Bessemer, Ala.; John P. Waitkue, Chicago, Ill.; George K. Wharton, Los Angeles, Calif. and Maxwell R. Berry, Atlanta, Ga.

The following were re-elected Governors: Drs. Samuel W. Yabroff, Oakland, Calif.; Dale W. Creek, Santa Barbara, Calif.; Milton M. Lieberthal, Bridgeport, Conn.; William C. Coles, Atlanta, Ga.; Fernando Milanes, Havana, Cuba; Francisco Puente Pereda, Mexico City, D.F.; George J. Rukstinat, Chicago, Ill. Newly elected was Drs. Paul J. Connolly, Detroit, Mich. Dr. Libby Pulsifer, Rochester, N. Y. was re-elected Chairman of theBoard of Governors.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The Part 1 Examinations (Written) will be held in various cities of the United States, Canada, and military centers outside the Continental United States on Friday, January 13, 1961.

Reopened Candidates will be required to submit Case Reports for review thirty days after notification of eligibility. No reopened candidate may take the Written Examination unless the case abstracts have been received in the office of the Executive Secretary.

Current Bulletins outlining present requirements may be obtained by writing to the Executive Secretary's office, Robert L. Faulkner, M. D., American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

1960 AMES AWARD

The American College of Gastroenterology announces the 1960 Ames Award for the best

papers published during the past year in its official publication, **The American Journal of Gastroenterology.**

First prize was awarded to Drs. W. D. Davis, Jr., Hugh Batson, Jr., William Schindel and Stanley Reichman of New Orleans, La., for their paper, "The Splenic Approach to the Portal Circulation."

The second prize went to Dr. Daniel Stowens, Los Angeles, Calif. for his paper "Congenital Biliary Atresia."

The third prize was given to Dr. Robert A. Nordyke of Honolulu, Hawaii, for "Biliary Tract Obstruction and Its Localization with Radioiodinated Rose Bengal."

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS EXAMINATION:

Medicine and Surgery

December 8, 9, 10, 1960

Thursday, December 8, 1960

8:30 A.M. to 10:30 A.M.
Pathology & Bacteriology
10:40 A.M. to 12:40 P.M.
Chemistry
1:40 P.M. to 3:40 P.M.
Obstetrics
3:50 P.M. to 5:50 P.M.
Hygiene

Friday, December 9, 1960

8:30 A.M. to 10:30 A.M.
Surgery
10:40 A.M. to 12:40 P.M.
Materia Medica
1:40 P.M. to 3:40 P.M.
Physiology
3:50 P.M. to 5:50 P.M.
Gynecology

Saturday, December 10, 1960

8:30 A.M. to 10:30 A.M.
Theory & Practice of Medicine & Physical Diagnosis
10:40 A.M. to 12:40 P.M.
Anatomy

Applicants must be present at the examination room, Charity Hospital, New Orleans, Room W-605, on Thursday, December 8, 1960 at 8:15 A.M.

Applications must be filed at 930 Hibernia Bank Bldg., N. O. by November 17th. For information, telephone 524-6763 or write Dr. Edwin H. Lawson, Secretary-Treasurer.

MEDICAL HISTORY OF WAR OFFERED

Many of the medical lessons learned during World War I had to be relearned under fire during World War II because of paucity of distribution of the World War I medical history.

Lieutenant General Leonard D. Heaton, The Army Surgeon General in an endeavor to prevent this costly relearning process, in the unhappy event of another war, has directed the preparation, publication, and distribution of the "History of the Medical Department, United States Army, in World War II." General Heaton is particularly anxious that information of the existence and availability of this History be circulated widely among the profession, both military and civilian.

Of the 48 volumes programmed for the series, 15 have been published and can be purchased at modest cost from The Superintendent of Documents, Government Printing Office, Washington 25, D. C. The set of 15 volumes may be purchased for $66.50 or individual volumes can be obtained at remarkably low prices. Commanding officers of medical units may requisition copies for their Medical Units libraries by submitting DA Form 17 directly to The Historical Unit, U. S. Army Medical Service, Washington 12, D. C., ATTN: Promotion Branch.

Volumes now available are:

"General Surgery"— Edited by Michael E. DeBakey, M. D.

"Neurosurgery," Volume I (Head Injuries)— Edited by R. Glen Spurling, M. D. and Barnes Woodhall, M. D.

"Neurosurgery," Volume II (Spinal Cord and Peripheral Nerve Injuries)— Edited by R. Glen Spurling, M. D. and Barnes Woodhall, M. D.

"Hand Surgery"—Edited by Sterling Bunnell, M. D.

"Ophthalmology and Otolaryngology"—Edited by M. Elliott Randolph, M. D. and Norton Canfield, M. D.

"Orthopedic Surgery, European Theater of Operations"—Edited by Mather Cleveland, M. D.

"Orthopedic Surgery, Mediterranean Theater of Operations"—By Oscar P. Hampton, M. D.

"Physiologic Effects of Wounds"—Edited by Fred W. Rankin, M. D. and Michael E. DeBakey, M. D.

"Vascular Surgery"—Edited by Daniel C. Elkin, M. D. and Michael E. DeBakey, M. D.

"Cold Injury, Ground Type"—By Tom F. Whayne and Michael E. DeBakey, M. D.

"Dental Service"—George F. Jeffcott, D.M.D.

"Environmental Hygiene"—By James Stevens Simmons, M. D. and others.

"Personal Health Measures and Immunization"—By John E. Gordon, M. D., Tom F. Whayne, M. D. and others.

"Communicable Diseases," Volume IV — By John E. Gordon, M. D., Joseph Stokes, M. D. and others.

"Hospitalization and Evacuation, Zone of Interior"—By Clarence McKittrick Smith.

RISE IN HOSPITAL INFECTIONS MAY BE "MORE APPARENT THAN REAL"

The widespread impression that the rate of postoperative infections in hospitals is increasing may be "more apparent than real," according to

the Journal of the American Medical Association.

A study to determine the rate of infection following 3,089 operations for removal of part of the stomach (subtotal gastrectomies) performed at Massachusetts General Hospital, from 1932 to 1958, is reported in the July 9 issue of the Journal.

The study showed a 16 per cent incidence from 1932 through 1940, 4.1 per cent from 1941 through 1953, and 9.4 per cent from 1954 through 1958.

The increase in the latter five-year period is largely the consequence of a greater incidence of infection in the general hospital service, the Journal article said. In the same period, the incidence of infection in the private service was only 5.5 per cent.

Furthermore, the increase in infection in the general hospital service reflected a rise in the number of emergency subtotal gastrectomies performed, the article said.

A policy change in the administration of the emergency ward and mounting dissatisfaction with nonsurgical treatment of massive stomach hemorrhages contributed to a far greater number of emergency subtotal gastrectomies than in former years, it said.

"The cumulative facts suggest that the patient and his disease may be the most significant variable to account for the rise in postoperative sepsis infection after subtotal gastrectomies in the past few years," the article concluded.

All of the factors that may be causally related to the recent increase in postoperative infection cannot be identified from this study, it said, but "the necessities of emergency surgery are a partial explanation."

Commenting editorially, the Journal said:

"If future studies from other institutions are in accord with these facts, it may be concluded that any rise in the risk of postoperative surgical sepsis is more apparent than real and that such impressions are based on the treatment of more debilitated patients by a greater variety of complex technical procedures."

The authors of the article are Drs. Benjamin A. Barnes, Glenn E. Behringer, Frank C. Wheelock, Earle W. Wilkins, and Oliver Cope, Boston.

HEART CAN NOW BE REVIVED WITH CLOSED CHEST

Cardiac massage—often a life-saving measure—can now be performed without opening the chest.

A closed-chest technique for reviving a heart that has stopped was described by W. B. Kouwenhoven, Dr. Ing. (Doctor of Engineering), James R. Jude, M.D., and G. Guy Knickerbocker, M.S.E., Johns Hopkins University School of Medicine, Baltimore, in the July 9 Journal of the American Medical Association.

"The real value of the method lies in the fact that it can be used wherever the emergency arises, whether that is in or out of the hospital," they said.

When the heart stops, circulation must be restored promptly or the consequent loss of oxygen can do irreparable damage to the brain or nervous system.

The new technique was worked out in experiments with more than 100 dogs, they said, and as applied to man "requires only the human hand."

The method consists of applying pressure with one hand on top of the other vertically downward on the patient's breast bone about 60 times per minute. At the end of each pressure stroke, the hands are lifted slightly to permit full expansion of the chest.

The pressure on the breast bone compresses the heart between it and the spine, forcing out blood while relaxation of pressure allows the heart to fill, the researchers explained.

At first, they said, it was felt that use of the technique might be limited to children whose ribs were known to be flexible. However, they said they found that the chest of an unconscious adult is "remarkably flexible."

During the past 10 months, the closed-chest method has been used on 20 patients ranging from two months to 80 years of age, they reported, adding:

"All 20 patients were resuscitated and . . . 14 of them are alive without central nervous system damage."

The technique has been "proved to be effective" in cases of heart stoppage and has "provided circulation adequate to maintain the heart and the central nervous system," they concluded.

BOOK REVIEWS

Lectures on Interpretation of Pain in Orthopedic Practice; by Arthur Steindler, M. D., Springfield, Illinois, Charles C Thomas, 1959, pp. 733. Price $18.50.

The orthopedist is constantly confronted by the disability triad of deformity, dysfunction, and pain. Of these, pain is the most difficult to treat and also covered the least by surgical texts. A recent book has been offered to clarify this problem.

Arthur Steindler (1878-1959) culminated his years of achievement by assembling and analyzing data on the interpretation and treatment of pain. The anatomical and physiological basis of sensation is followed by regional studies of pain syndromes of the musculoskeletal system. Ade-

quate illustrations of clinical cases and anatomical dissections are included along with extensive biographical material. Brief illustrative cases are presented. This book will offer a great contribution to subject matter heretofore uncorrelated. The complete discussions will render a valuable aid in differential diagnosis. It is directed toward the orthopedist, but should also be of help to the neurologist and the neurosurgeon as well.

DRS. MUIRL JOHNSTONE AND LYON K. LOOMIS

A Primer of Electrocardiography; by Burch, G. E. and Winsor, T.; 4th Edition. Published by Lea and Febiger, Philadelphia, 1960. Price $5.00, pp. 293.

This book is an excellent primer for an introduction to clinical electrocardiography. It is widely illustrated with clear-cut and diagrammatic electrocardiographic tracings. There are 128 pages devoted to principles of electrocardiography and various wave components of the normal and abnormal electrocardiogram. Forty-nine pages are devoted to the precordial leads and arrythmias is given 34 pages. Chapter 5 (last) discusses the clinical application of the electrocardiogram with a section on Spatial Vectorcardiography and another on the Ventricular Gradient. The Appendix (Tables and Electrocardiographic Criteria) and Index are adequate. The reviewer has no criticism of this book and heartily recommends it to student and physician alike for a clear and concise introduction to electrocardiography.

WALTER J. HOLLIS, M. D.

Medical Care of the Adolescent; by J. Roswell Gallagher, New York, Appleton-Century-Crofts, Inc., 1960, pp. 360. Price $10.00.

Mark Twain may be credited with emphasizing the undoubtedly earlier quip to the effect that "everyone talks about the weather, but no one does much about it." Until recently, a similar observation might have applied to the problems of adolescence. Now, however, a pioneer in our time has finally done a great deal about our teenagers in this excellent text based on the outstanding work done by himself and his staff at the Children's Hospital Medical Center at Boston, together with numerous contributions from his truly multi-disciplinary professional colleagues and consultative resources.

Three brief paragraphs in the preface of this important gap-bridging book set forth very nicely the important and timely justifications for all of its thirty very practical and well-composed chapters. Though a preliminary section or chapter concerning several important (gray, not black or white!) pre-adolescent "conditioning" factors and peculiarities might seem desirable for many readers, backgrounds of such nature are deftly and perhaps more properly woven into discussion of each problem peculiar to or commonly encountered in this erstwhile adolescent "no man's land" of medicine.

Though not specifically stated, implications are repeatedly clear that most problems of adolescents—based largely on "their unyielding overconcern with themselves"—can be solved by the thoughtful physician who is willing to listen and deal objectively but sympathetically with each of many such really rugged individualists.

The narrative style of the work is superb, and freely interwoven with pertinent brief and illustrative clinical reports. The bibliography is extensive and well organized, and the index seems very adequate.

All in all, this book should be of use to all physicians who are in any way concerned with adolescents—in other words, to practically *all* physicians!

R. V. PLATOU, M. D.

Smoking and Health; by Alton Ochsner, M. D., New York, N. Y., Messner, 1959, pp. 108. Price $3.00

This monograph which is an expansion of an earlier volume—Smoking and Cancer—is an extremely broad indictment against tobacco. The book is divided into six chapters and begins with a positive statement which was included in the previous version that cigarettes cause cancer. This statement, according to the author, is based upon substantiated research by the American Cancer Society, National Cancer Institute and National Institutes of Health, in addition to independent scientists throughout the world. In spite of the increasing amount of work which, according to the author has verified this statement, there are some scientists who seriously doubt the validity of their conclusions. The statements of Dr. Harold F. Dorn of the National Institute of Health are quoted in which (1) the death rate from all causes are 58 per cent greater among smokers than non-smokers, and (2) among heavy smokers—two packs or more a day—the death rate was almost twice that of non-smokers. This not only applied to lung cancer but applied to coronary heart disease, bronchitis, and allied diseases of the stomach and duodenum, cancer of the prostate, and cancer of the esophagus. Throughout the first chapter convincing evidence that cigarettes are a very important factor in the production of cancer of the lung is quoted; in addition, the important stress upon the heart, the circulatory system, as well as other system distress. In finalizing this chapter the statement is made "Unless cigarette smokers die earlier from something else, they risk death from lung cancer about the age of fifty-five."

The second chapter deals with the evidence that has been produced by researchers to defi-

nitely show that tobacco, and cigarettes particularly, does cause cancer in mice, thus proving the presence of a carcinogen in cigarette smoke. In spite of all this convincing experimental evidence, the tobacco industry through its advertising media since World War I has sponsored cigarettes first as a health-giving agent, and secondly as a cure-all for many ailments, thus greatly enhancing the sale of cigarettes. Dr. Ochsner states that the yield of tar and nicotine in filter cigarettes is sometimes higher than in un-filtered cigarettes. In spite of the inherent dangers of smoking, the cigarette industry through its advertising media is spending huge sums to convince the public of the value of smoking. The statistical data of the American Cancer Society as quoted shows that in smokers of pipes and cigars or both, the death rate from all forms of cancer are 32 per cent above that of non-smokers; whereas among heavy cigarette smokers it is 156 per cent higher than among non-smokers and 200 per cent for lung cancer alone. All this points to convincing evidence that heavy smoking is definitely a factor in the production of cancer.

The third chapter deals with smoking and your heart. It was pointed out that the prevalence of circulatory disease among young people of draft age during World War II was amazing. The manpower loss to the military services was very large. There were approximately 7 per cent rejections which amounted to more than 400,000,-000 rejectees. This was due to some cardiovascular defect. During the war period approximately 80,000 persons were discharged from the service because of cardiovascular disability. The link between tobacco and heart conditions is an old one. This was first pointed out in 1848. This has been repeatedly substantiated by researchers. It has been pointed out that the villian in this thing is nicotine and the effects upon the heart and the circulatory system have been manifold.

The fourth chapter deals with smoking and digestion. Importance of smoking as an irritating factor is thoroughly recognized by all insofar as the digestive system is concerned. Quoting Dr. Sara M. Jordan of the Lahey Clinic, it ranks with fatigue and tension as the most frequent cause of ulcer recurrence. Dr. Ochsner categorically states that he has never seen a case of ulcer of the stomach get entirely well as long as the individual smoked. The disadvantages of smoking and the deleterious effects upon digestion are repeatedly pointed out.

In the chapter on smoking and sex it is pointed out by the statistical studies of Wynder and Graham in this country, and Doll and Hill in England, that the greater mortality of men from lung cancer may be due to the fact that men have been smoking longer than women and tend to smoke more heavily. Other statistical data bear this out. Of further importance is the fact that it has been shown that there is a greater instance of frigidity, sterility and menstrual disturbance and miscarriages among women smokers than among non-smokers. An increase in fetal death rate and in infantile death rate in the first three years of life is indicated.

The next chapter titled "You Can Quit—You Must Quit" deals with the psychological approach to the problem. First, as to what there is in it in smoking; and second, the fact that people do quit smoking; third there are many programs which can be instituted to help one stop smoking. Ten points which are mentioned to help an individual cease smoking are:

(1) Stop smoking abruptly, completely and permanently. (2) Know why you smoked. (3) Build up your resolution. (4) Burn your bridges to the habit. (5) Time your break. (6) Disregard the brief withdrawal symptoms. (7) Adopt substitute habits. (8) Psychologize yourself. (9) Count your blessings, and proclaim them. (10) Help others to free themselves.

Therefore, if one must smoke, there are certain rules that should be followed:

(1) Smoke little. (2) Do not cheat your health with filters. (3) Avoid inhaling. (4) Do not hold smoke in your mouth. (5) If you switch to a pipe, keep it clean and cool. (6) Catch cancer symptoms early.

In this chapter, also, the responsibility of the industry is pointed out.

This monograph is written in a clear, concise factual style which makes a very strong case against the cigarette industry. It is obvious, if one is to believe the data presented, that the cigarette industry fails to realize its proper responsibility in regard to the health and welfare of the people of the world. It is obvious that if one reads this monograph that they can readily become convinced of the dangers of the cigarette habit.

LAWRENCE H. STRUG, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, Inc., N. Y.: Diverticulitis, by Sara M. Jordan, M. D., and Russell S. Boles, Jr., M. D.; The Structure and Dynamics of the Human Mind, by Edoardo Weiss, M. D.

W. B. Saunders Co., Phila.: The Management of Fractures and Soft Tissue Injuries, by the Committee on Trauma, American College of Surgeons; Fundamentals of Chest Roentgenology, by Benjamin Felson, M. D.; Complications in Surgery and Their Management, edited by Curtis P. Artz, M. D., and James D. Hardy, M. D., with contributions by sixty-nine authorities.

Charles C Thomas, Publisher, Springfield, Ill.: Toward the Diagnosis of Congenital Heart Disease, by W. Carleton Whiteside, M. D.

The Williams & Wilkins Co., Balt.: Aids to Gynaecology, by W. R. Winterton, M. A., M. B. (12th edit.).

THE JOURNAL OF THE LOUISIANA STATE MEDICAL SOCIETY

Formerly New Orleans Medical and Surgical Journal

VOLUME 112

JANUARY, 1960

through

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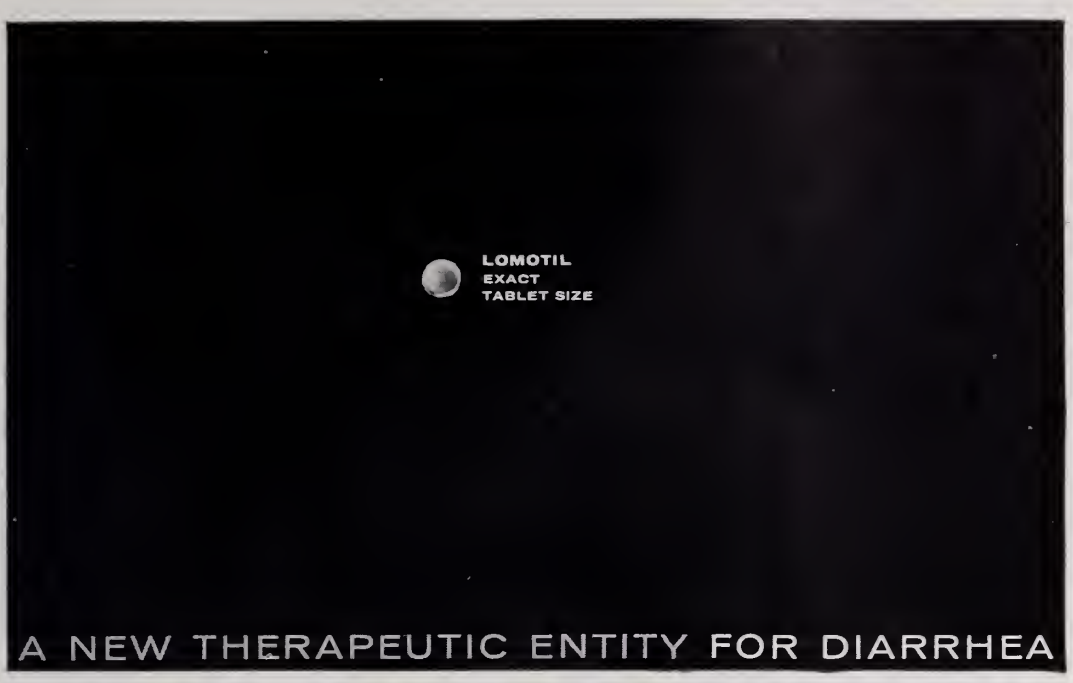
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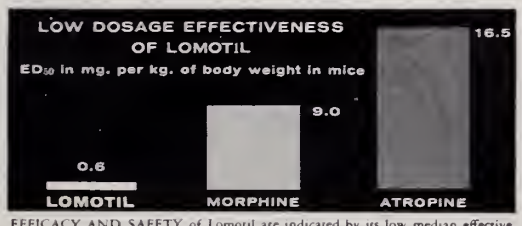
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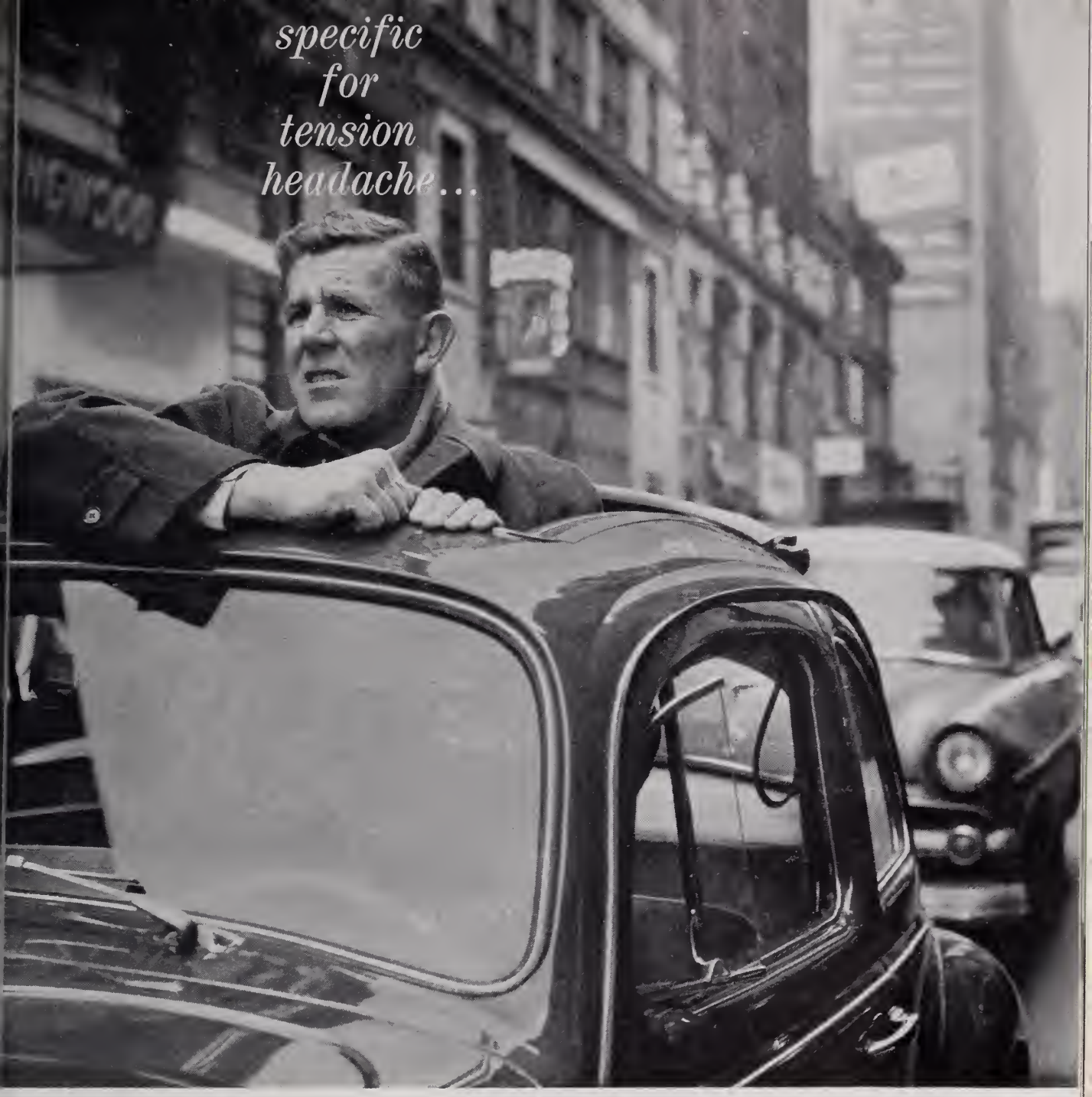
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REFERENCES:

1. Scherbel, A. L.; Schuchter, S. L., and Harrison, J. W.: Cleveland Clin. Quart. 24:98, April, 1957.
2. Waine, Hans: Arthritis, rheumatoid, in Conn, H. F.: Current Therapy 1959, Philadelphia, W. B. Saunders Co., 1959, p. 565.

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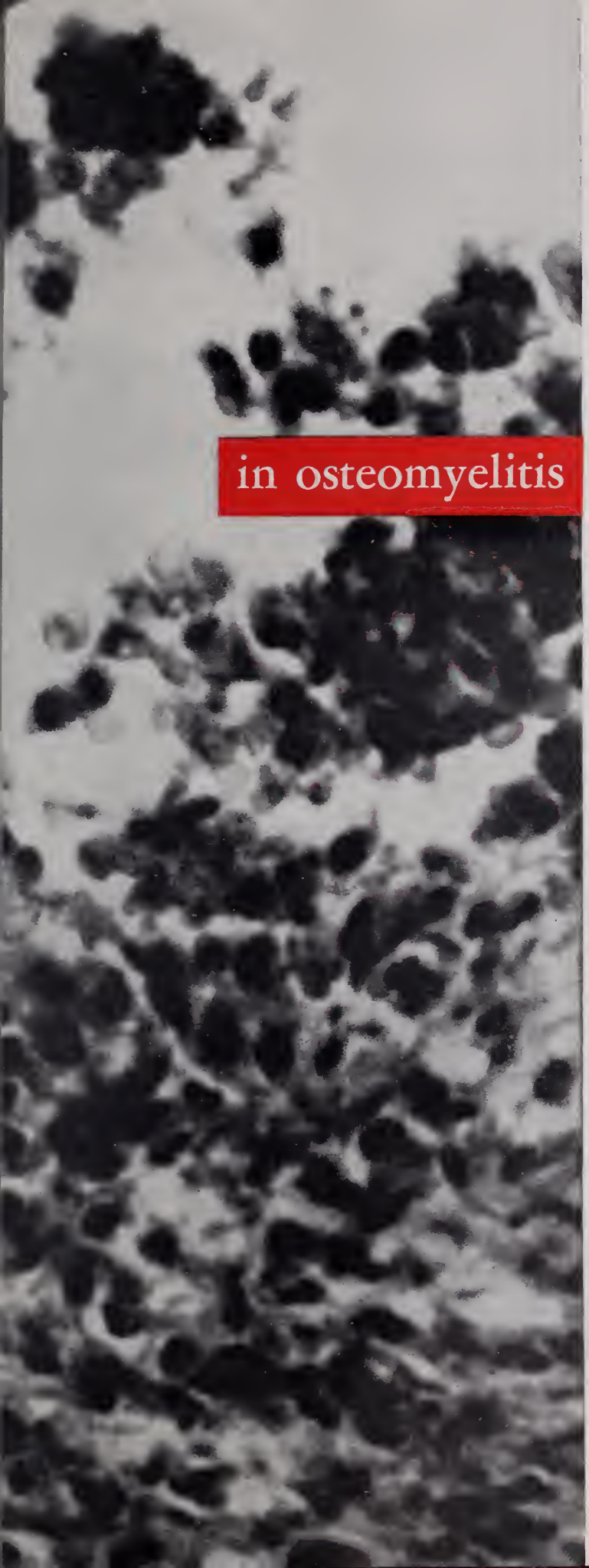
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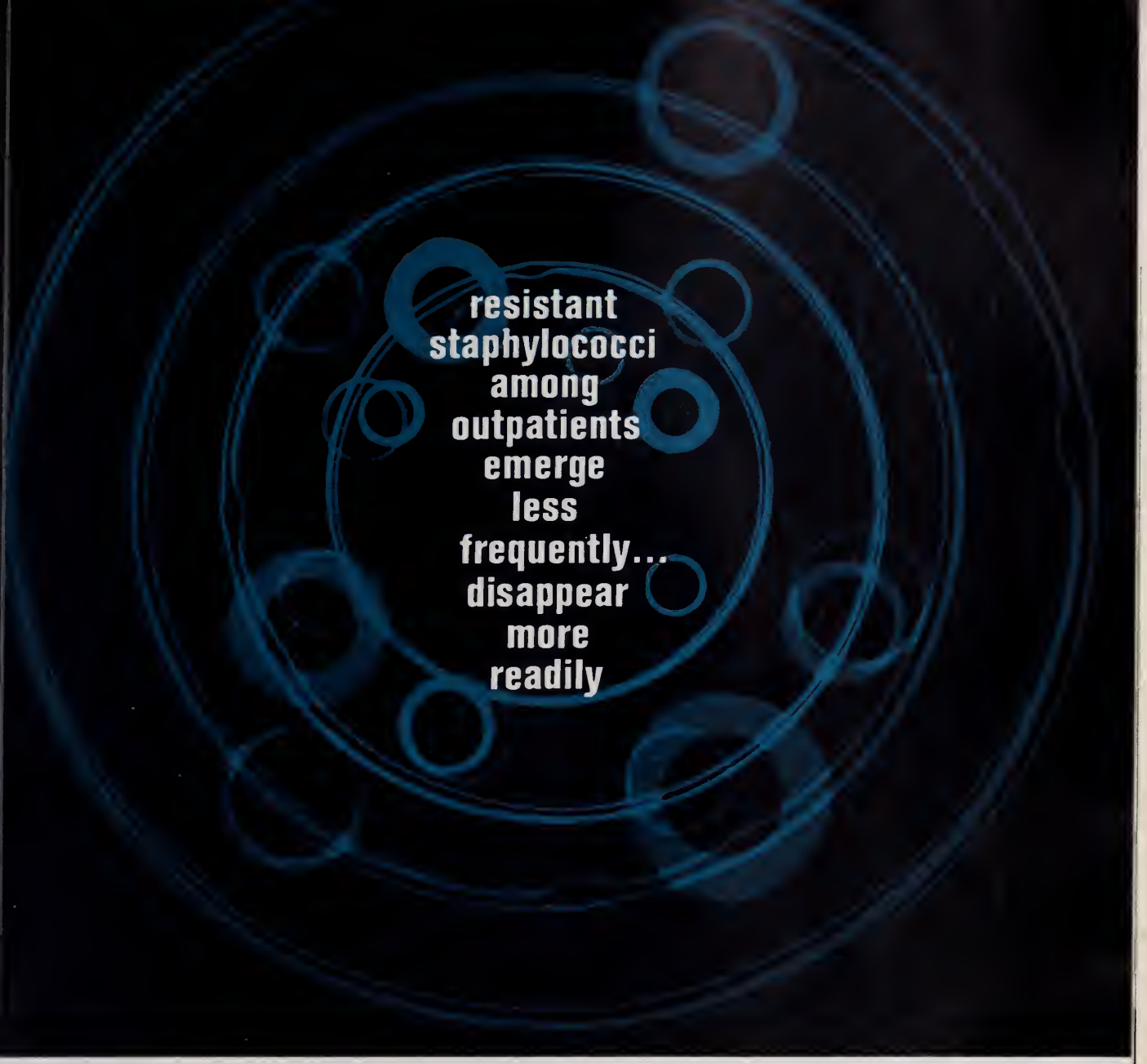


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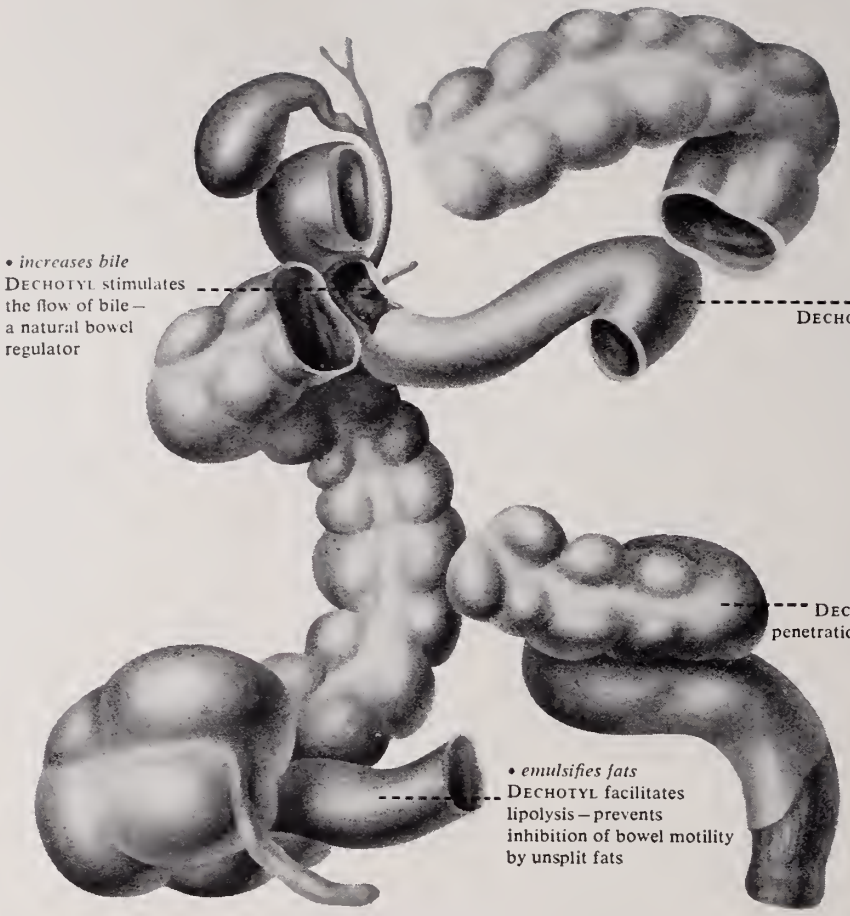
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Serpasil has proved effective as a heart-slowing agent in the following conditions: mitral disease; myocardial infarction; cardiac arrhythmias; neurocirculatory asthenia; thyroid toxicosis; excitement and effort syndromes; cardiac neurosis; congestive failure. Serpasil should be used with caution in patients receiving digitalis and quinidine. It is not indicated in cases of aortic insufficiency.

SUPPLIED: Tablets, 0.1 mg., 0.25 mg. (scored) and 1 mg. (scored). Complete information available on request.

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Measured food, but not austere. Lemon juice salad dressing, bouillon, fruit ice add few carbohydrates, much appeal.

The secret of a successful diabetic diet is acceptance

Pleasing variety is possible in the diabetic's diet. With few exceptions, his menu can include satisfying amounts of most popular foods. Using exchange lists, imaginative meals can be planned that fit easily into your patient's daily life, gaining his fullest acceptance and co-operation.

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And with your approval, a glass of beer might be planned to add zest to your patient's diet.

Carbohydrate, 9.4 Gm; Protein, 0.8 Gm; Fat, 0 Gm; Calories, 104/8 oz. glass (Average of American Beers)

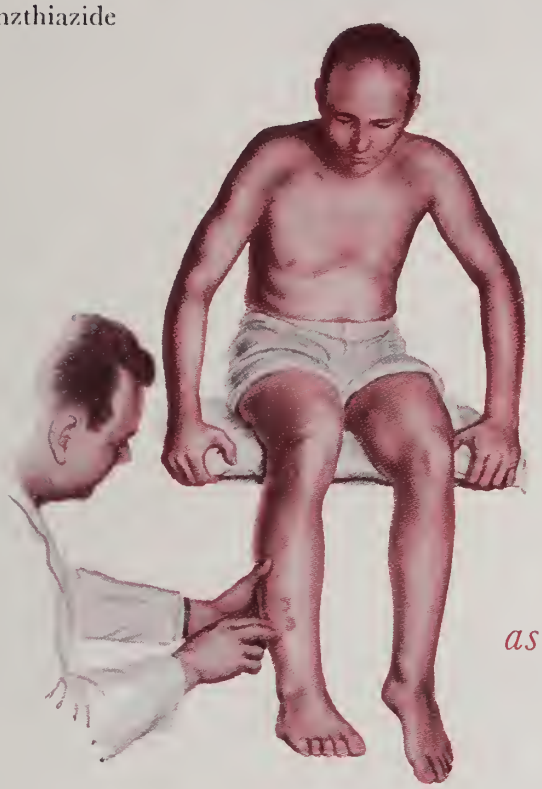
United States Brewers Foundation

If you'd like reprints of this and 11 other different diet menus for your patients, write United States Brewers Foundation, 535 Fifth Avenue, N.Y. 17, N.Y.

NaClex®

benzthiazide

a new diuretic with an unsurpassed faculty for salt excretion



as salt goes, so goes edema

A basic principle of diuresis is that "increased urine volume and loss of body weight are proportional to and the osmotic consequences of loss of ions."[1]

Robins' new NaClex is a potent, oral, non-mercurial diuretic that helps reduce edema through the application of this fundamental principle. It limits the reabsorption of sodium and chloride in the renal proximal tubules (*with a relative sparing of potassium*). The body's homeostatic mechanism responds by increasing the excretion of excess extracellular water. Thus the NaClex-induced removal of salt leads to a reduction of edema.

a unique chemical structure

NaClex (benzthiazide) is a new molecule which provides a "pronounced increase in diuretic potency"[2] over its antecedent sulfonamide compound. Compared tablet for tablet with current oral diuretics, it is unsurpassed in diuretic potency.

twofold value

NaClex produces diuresis, weight loss, and symptomatic improvement in edema associated with various conditions. It also has antihypertensive properties and may be used alone in mild hypertension or with other antihypertensive drugs in severer cases.

For complete dosage schedules, precautions, or other information about NaClex, please consult basic literature, package insert, or your local Robins representative, or write to the A. H. Robins Co., Inc.

Supply: Yellow, scored 50 mg. tablets.

References: 1. Pitts, R. F., Am. J. Med., 24:745, 1958. 2. Ford, R. V., Cur. Therap. Res., 2:51, 1960.

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Diet or Drugs?

In the long term control of serum cholesterol, dietary therapy can achieve the objective in the manner most closely approximating physiological norm.

The long term control of elevated serum cholesterol through changes in the dietary pattern of the patient puts nature's own process to work most effectively to achieve the objectives of treatment. Here are the beneficial features of dietary therapy:

Offers a solution to the related problems of obesity.

Involves little or no added expense to the patient.

May be used with complete safety.

Produces no adverse side effects.

Preferable for the long-term management of a chronic condition.

Brings about reduction of serum cholesterol through physiological processes, as yet not fully understood.

Does not usually generate new compounds in the blood, thus helping the doctor make a more accurate analysis of blood serum cholesterol.

Elevated serum cholesterol has now been linked to an imbalance in the ratio of the type of fat in the diet. Reductions in cholesterol levels have been achieved repeatedly, both in medical research and practice, through the control of total calories and through the replacement of an appreciable percentage of saturated fat by poly-unsaturated vegetable oil.

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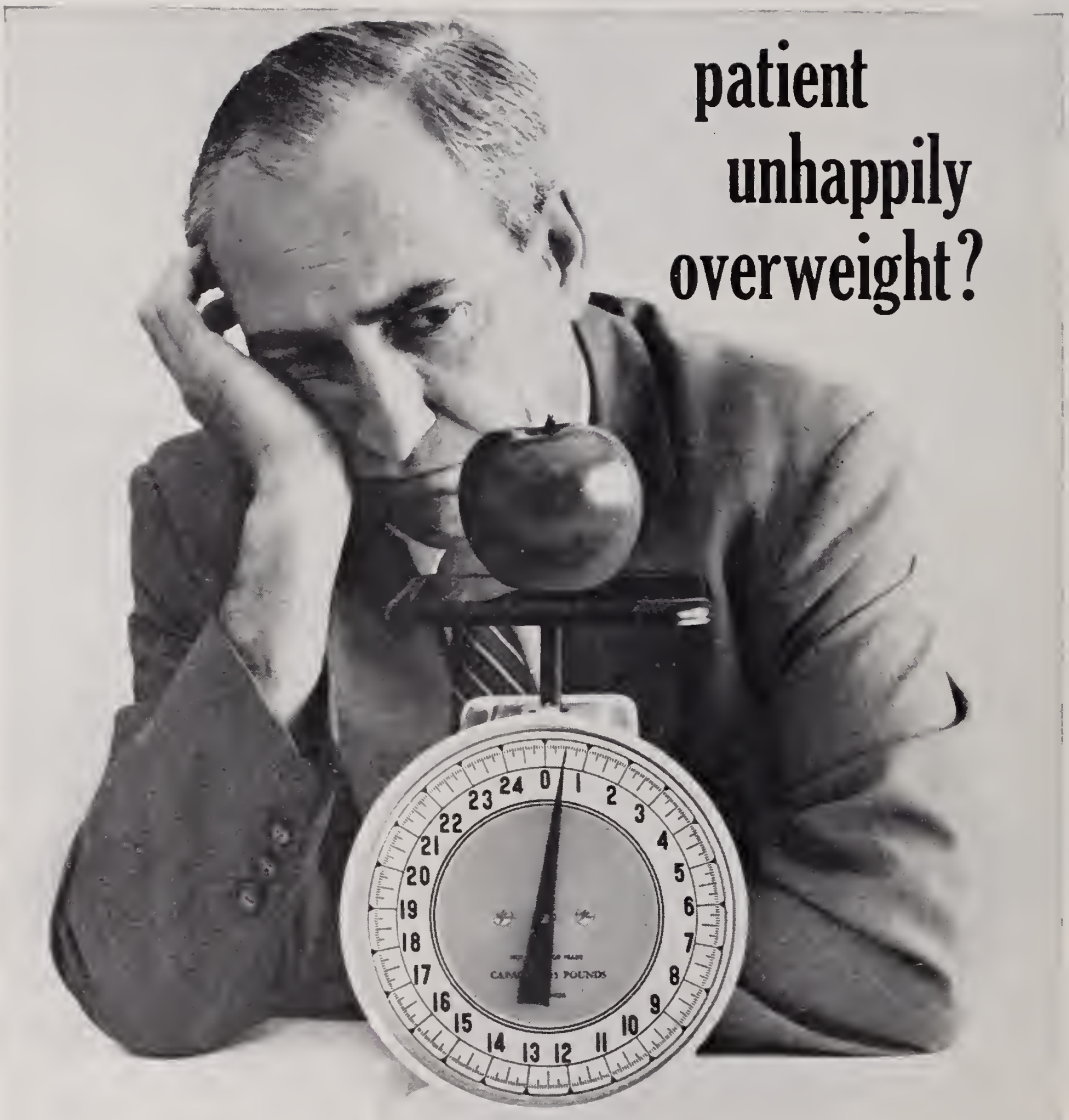
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Supplied: Tablets 5 mg., scored. Bottles of 100 and 1000.

[1] Douglas, H. S.: West. J. Surg. 59:238 (May) 1951.

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1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: Antibiotic Med. & Clin. Ther. 3:378, (Nov.) 1956. 2. Boger, W. P.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: Antibiotic Med. & Clin. Ther. 5:604 (Oct.) 1958. 4. Vinnicombe, J.: Ibid. 5:474 (July) 1958. 5. Anderson, P. C., and Wissinger, H. A.: U. S. Armed Forces M. J. 10:1051 (Sept.) 1959. 6. Roepke, R. R.; Maren, T. H., and Mayer, E.: Ann. New York Acad. Sc. 60:457 (Oct.) 1957.

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Kestler, O.: Conservative Management of "Low Back Syndrome", J.A.M.A. 172: 2039 (April 30) 1960.

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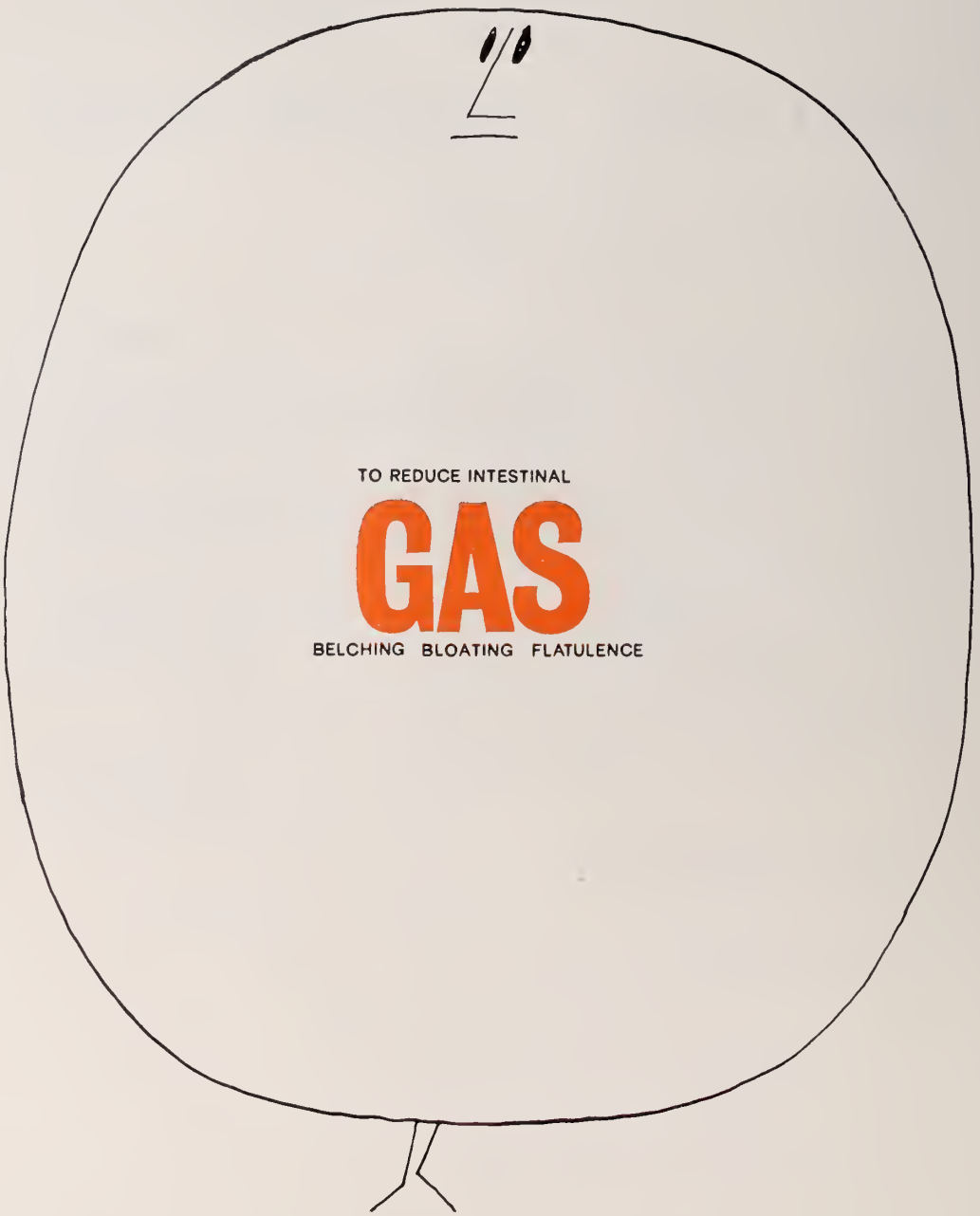
SUPPLIED: 350 mg., white tablets, bottles of 50.
For pediatric use, 250 mg., orange capsules, bottles of 50.

Literature and samples on request.

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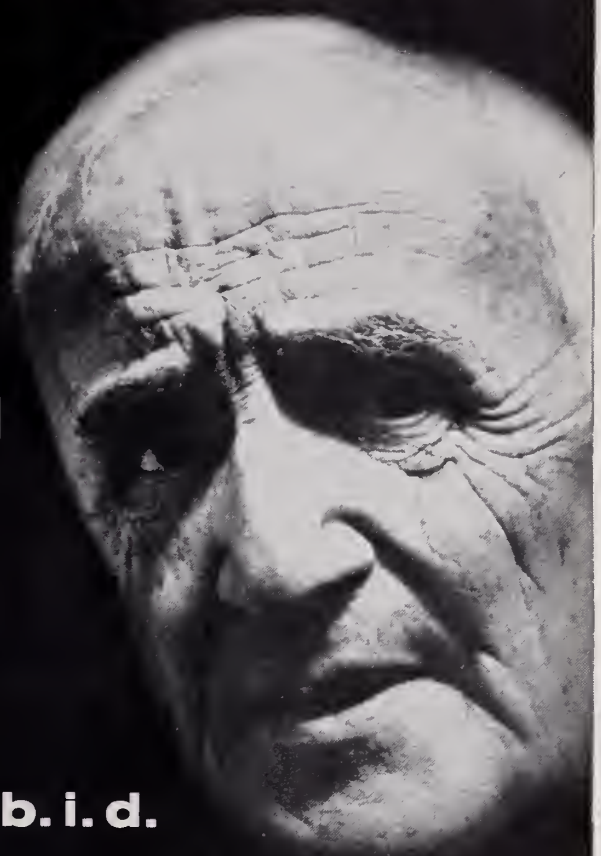
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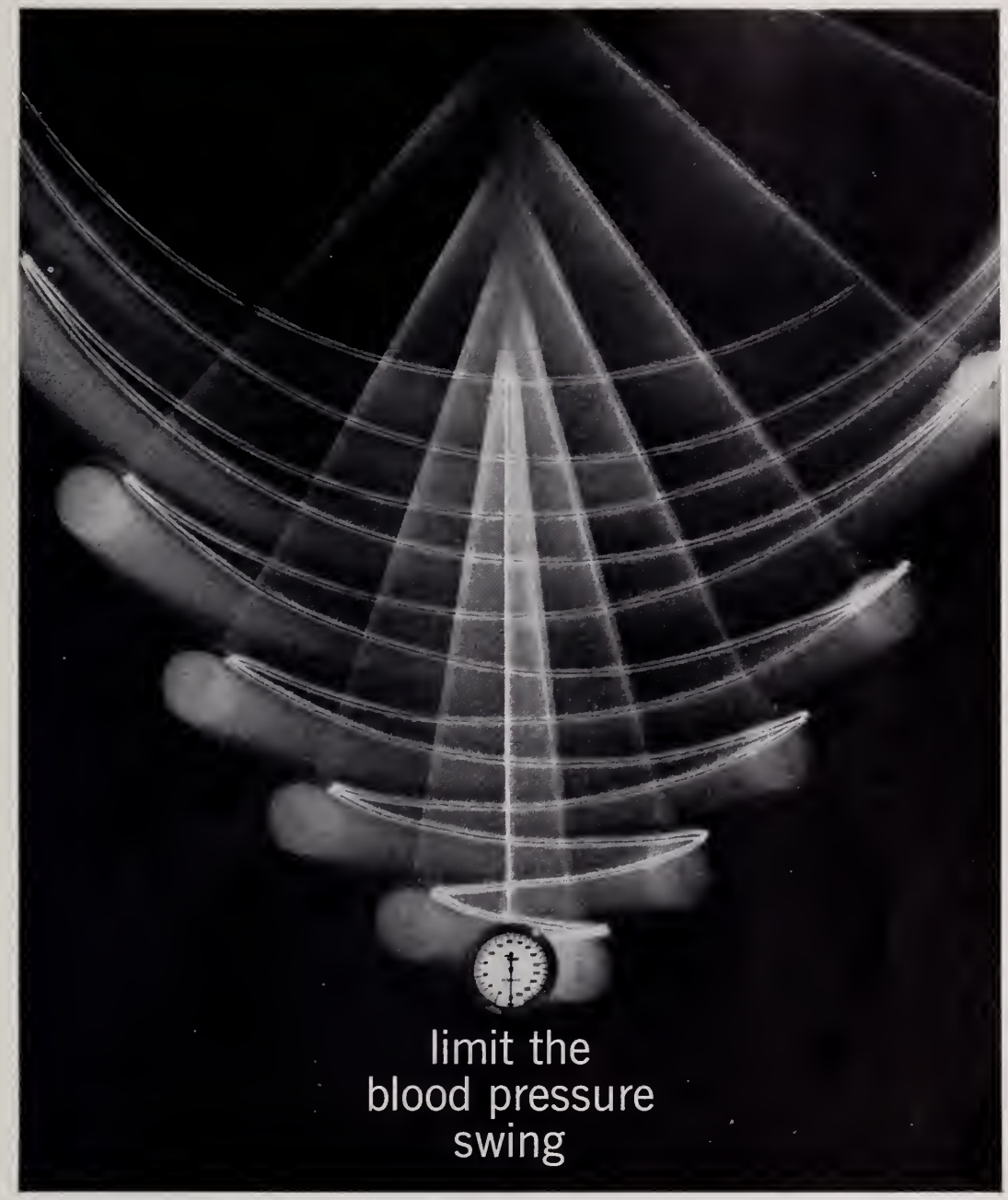
★ Samples are available to physicians upon request. Please make your request on your prescription sheet or letterhead.

[1] **New and Nonofficial Drugs** 1959, p. 644.
[2] **Duncan's Diseases of Metabolism**, 4th ed., 1959, p. 412.

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In brief, wine taken with discretion adds greatly to the pleasures of the table, to physical comfort and to mental serenity in the aged, as well as in the chronic sufferer and the convalescent.

Research information on wine is available on request. Write for your copy of *"Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

---

1. Goetzl, F.R.: Permonente Found. M.Bull. *8*:72 (April) 1950.
2. Ogden, E., and Southard, F.D., Jr.: Fed. Proceedings *5*:77 (1946)
3. Brooks, H.: Med. J. & Rec. *127*:199 (1928)
4. Haggard, H.W., and Jellinek, E.M.: Alcohol Explored, New York, Doubledoy, Doran, 1942.

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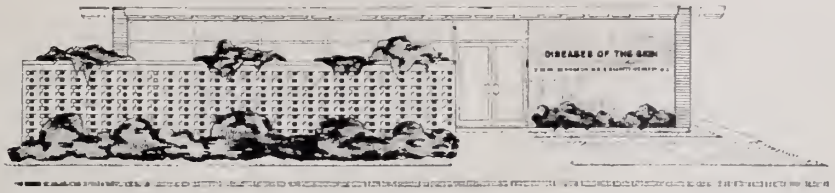
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THE AMERICAN CANCER SOCIETY

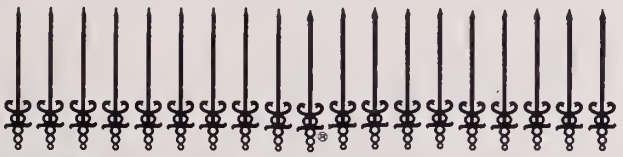
is dedicated to saving lives from cancer and spearheads the fight against cancer quackery. Its Committee on New or Unproved Methods of Treatment of Cancer has a membership of physicians, lawyers, educators, and public relations specialists. This committee has been a prime mover in developing constructive action

against cancer quackery

Inspired by model legislation formulated by this committee with the active cooperation of the California Medical Association, California, Kentucky and Nevada recently passed bills providing the first effective means of fighting cancer quackery at its base of operations—in the local community.

To keep both the public and the medical profession informed, the Society has established, in its national office, a central repository of material on new or unproved methods of cancer diagnosis, treatment and cure—a principal source of such information in this country.

The American Cancer Society, in this as in all its efforts, serves both the private citizen and the practicing physician—and is, in turn, served by both.



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LOUISIANA DIVISION, INC.

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